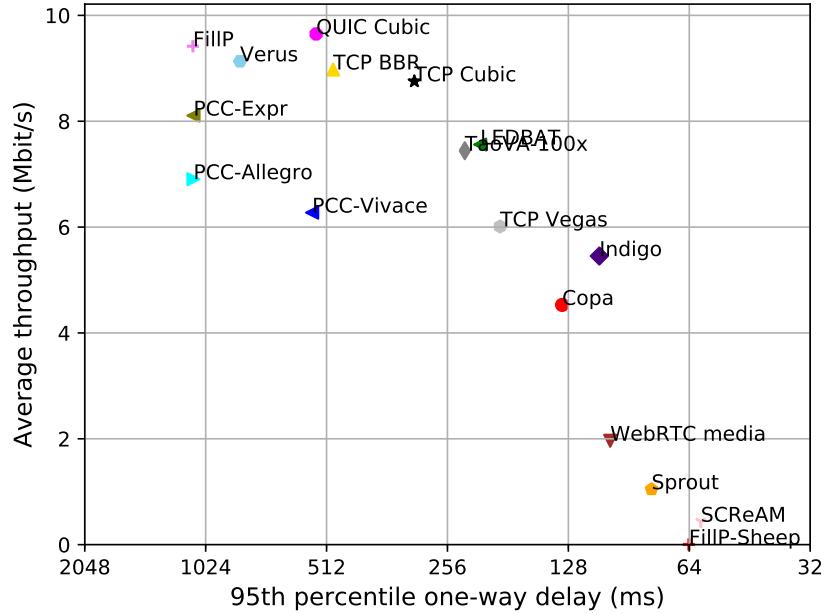


Pantheon Report

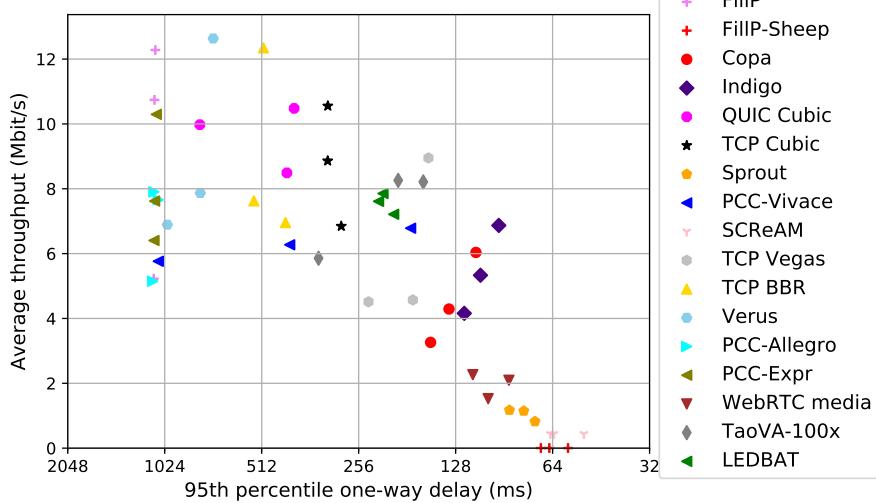
Generated at 2018-06-29 20:24:43 (UTC).
Data path: AWS India 1 Ethernet (*local*) → India ppp0 ppp0 (*remote*).
Repeated the test of 17 congestion control schemes 3 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
NTP offsets were measured against nets.org.sg and have been applied to correct the timestamps in logs.

```
Git summary:  
branch: master @ 715dc5f09d172e419699f6f17f1cb4c45064f212  
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834  
third_party/fillp-sheep @ 30060ab034deb3424347f5cc3db86198eac35d2a  
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4  
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d  
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf  
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39  
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1  
  M receiver/src/buffer.h  
  M receiver/src/core.cpp  
  M sender/src/buffer.h  
  M sender/src/core.cpp  
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab  
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42  
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2  
  M src/ScreamClient  
  M src/ScreamServer  
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26  
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494  
  M src/verus.hpp  
  M tools/plot.py  
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4  
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme
 3 flows with 10s interval between flows



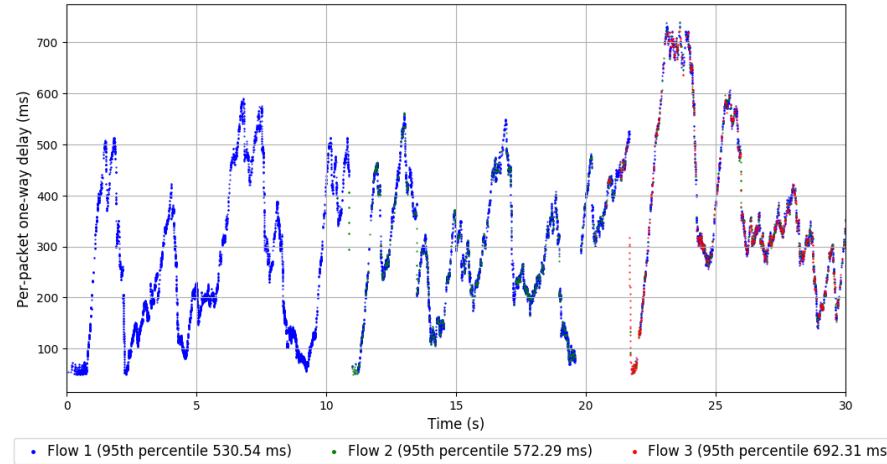
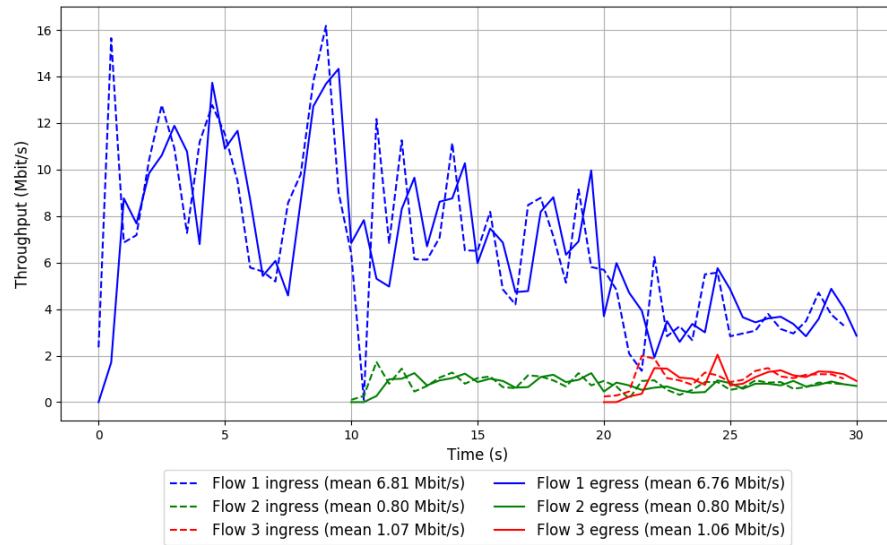
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	6.68	1.90	3.22	487.98	489.20	549.08	0.85	1.26	2.58
Copa		2.39	2.08	2.27	116.68	142.09	155.27	0.37	0.70	0.74
TCP Cubic		5.89	2.88	2.90	299.85	342.32	333.90	0.36	1.03	2.10
FillP		8.09	1.06	2.19	1100.58	1100.51	1107.62	46.96	35.67	61.10
FillP-Sheep		0.00	0.00	0.00	62.02	64.04	62.81	0.00	0.00	1.33
Indigo		2.93	2.31	3.05	99.43	121.37	106.11	0.08	0.26	0.27
LEDBAT		4.83	3.31	1.62	210.23	212.71	216.83	0.46	0.81	1.37
PCC-Allegro		4.27	3.03	2.02	1085.15	1094.99	1225.55	20.65	31.23	71.69
PCC-Expr		4.43	4.22	2.87	1086.72	1101.46	1112.50	25.17	41.19	62.10
QUIC Cubic		6.73	3.16	2.64	464.93	582.73	624.90	0.78	1.40	4.23
SCReAM		0.22	0.22	0.22	59.78	63.79	56.41	0.13	0.19	0.35
Sprout		0.63	0.40	0.45	80.88	79.09	79.03	0.09	0.23	0.17
TaoVA-100x		3.95	3.71	3.12	184.03	204.52	381.20	0.26	0.50	1.13
TCP Vegas		3.01	2.55	3.93	165.03	192.75	263.26	0.18	0.27	0.56
Verus		5.93	4.30	1.14	826.50	868.62	803.17	2.77	4.12	4.72
PCC-Vivace		4.07	2.17	2.31	544.62	509.48	661.48	2.12	2.52	5.71
WebRTC media		1.17	0.48	0.32	86.56	121.06	111.38	0.06	0.14	0.68

Run 1: Statistics of TCP BBR

```
Start at: 2018-06-29 19:45:28
End at: 2018-06-29 19:45:58
Local clock offset: 1.309 ms
Remote clock offset: -3.807 ms

# Below is generated by plot.py at 2018-06-29 20:23:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.63 Mbit/s
95th percentile per-packet one-way delay: 541.342 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 530.539 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 572.292 ms
Loss rate: 1.95%
-- Flow 3:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 692.312 ms
Loss rate: 3.60%
```

Run 1: Report of TCP BBR — Data Link

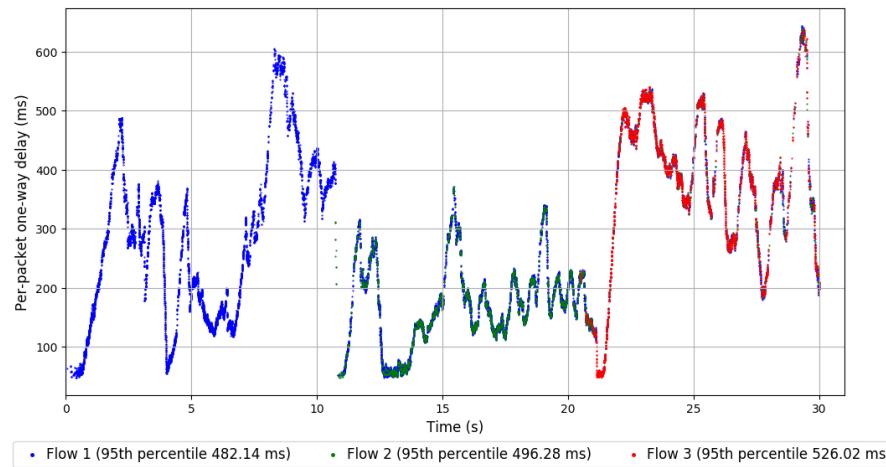
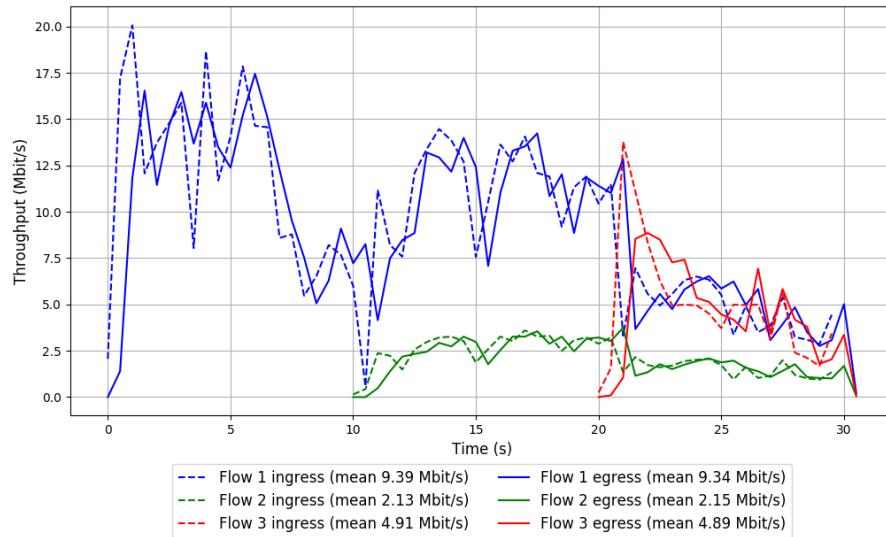


Run 2: Statistics of TCP BBR

```
Start at: 2018-06-29 20:04:09
End at: 2018-06-29 20:04:39
Local clock offset: 0.366 ms
Remote clock offset: -7.499 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.35 Mbit/s
95th percentile per-packet one-way delay: 505.743 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 9.34 Mbit/s
95th percentile per-packet one-way delay: 482.139 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 496.278 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 4.89 Mbit/s
95th percentile per-packet one-way delay: 526.024 ms
Loss rate: 2.01%
```

Run 2: Report of TCP BBR — Data Link

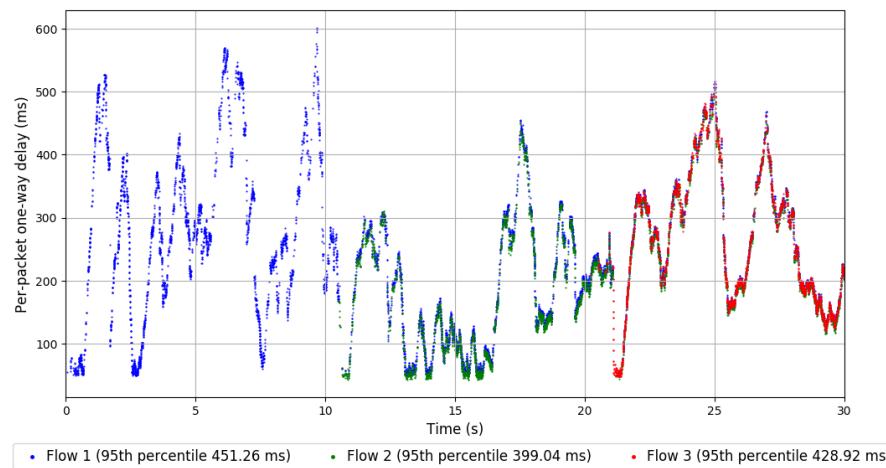
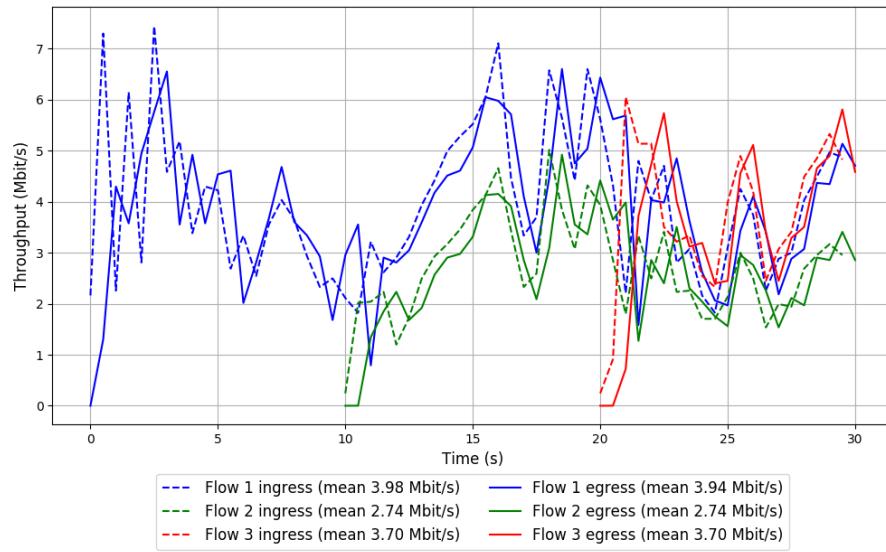


Run 3: Statistics of TCP BBR

```
Start at: 2018-06-29 20:22:53
End at: 2018-06-29 20:23:23
Local clock offset: 1.436 ms
Remote clock offset: -2.41 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.96 Mbit/s
95th percentile per-packet one-way delay: 431.914 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 3.94 Mbit/s
95th percentile per-packet one-way delay: 451.263 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 399.043 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 3.70 Mbit/s
95th percentile per-packet one-way delay: 428.918 ms
Loss rate: 2.14%
```

Run 3: Report of TCP BBR — Data Link

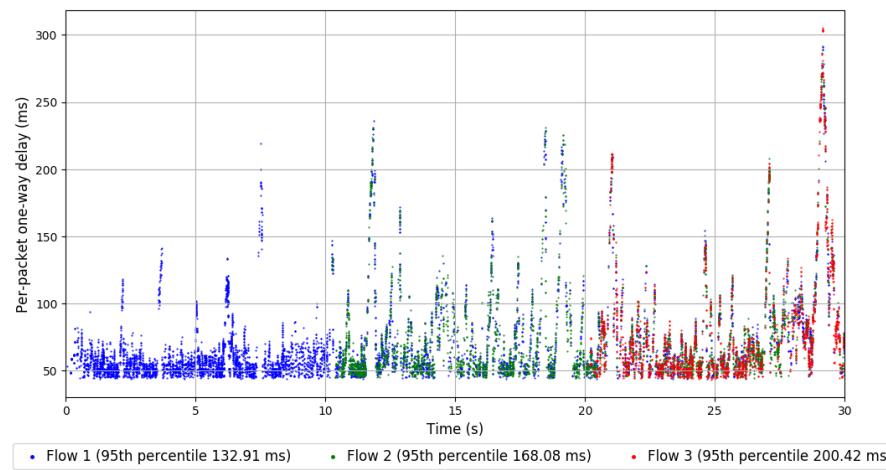
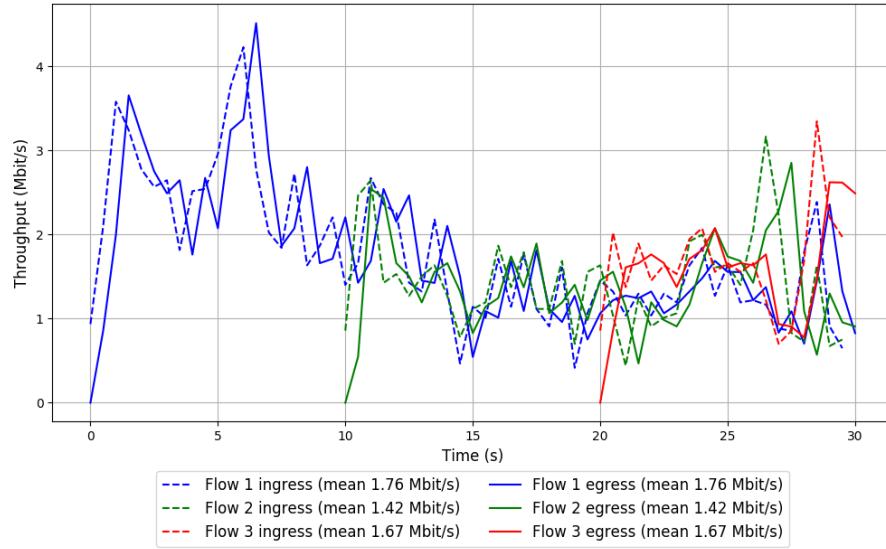


Run 1: Statistics of Copa

```
Start at: 2018-06-29 19:27:54
End at: 2018-06-29 19:28:24
Local clock offset: 0.019 ms
Remote clock offset: -2.334 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 153.095 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 132.907 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 168.080 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 200.419 ms
Loss rate: 0.55%
```

Run 1: Report of Copa — Data Link

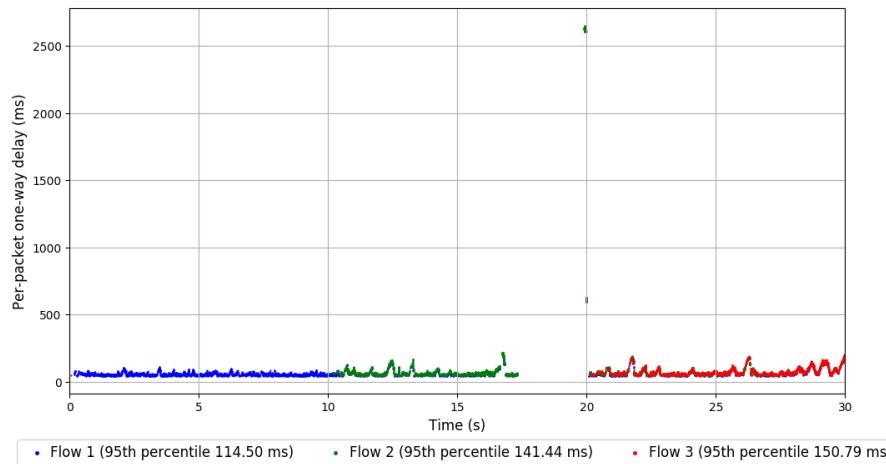
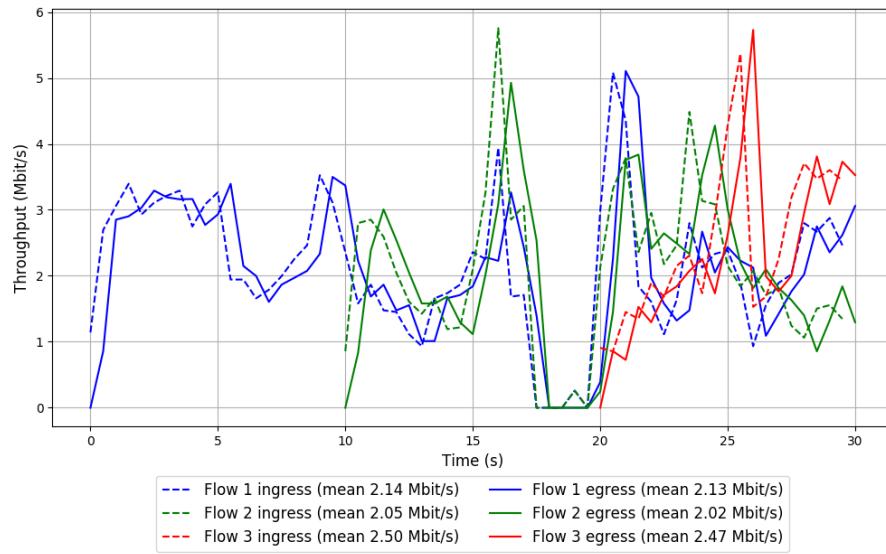


Run 2: Statistics of Copa

```
Start at: 2018-06-29 19:46:34
End at: 2018-06-29 19:47:04
Local clock offset: 2.972 ms
Remote clock offset: -4.327 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.29 Mbit/s
95th percentile per-packet one-way delay: 134.217 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 114.495 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 141.440 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 150.792 ms
Loss rate: 1.51%
```

Run 2: Report of Copa — Data Link

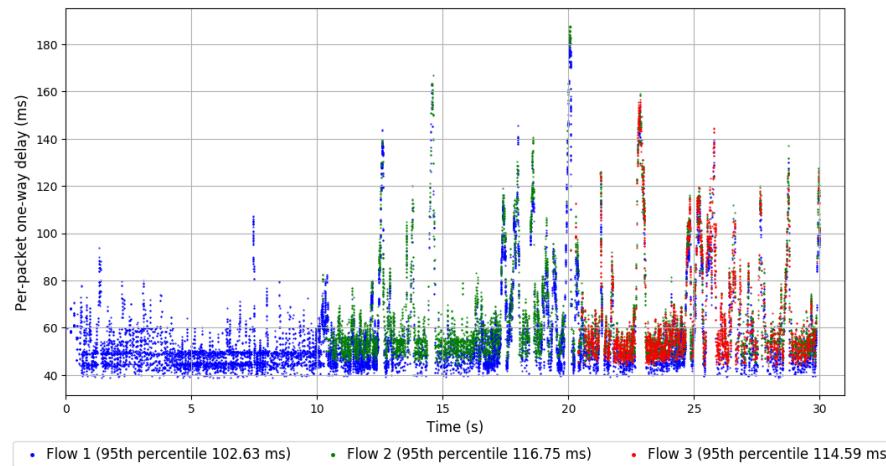
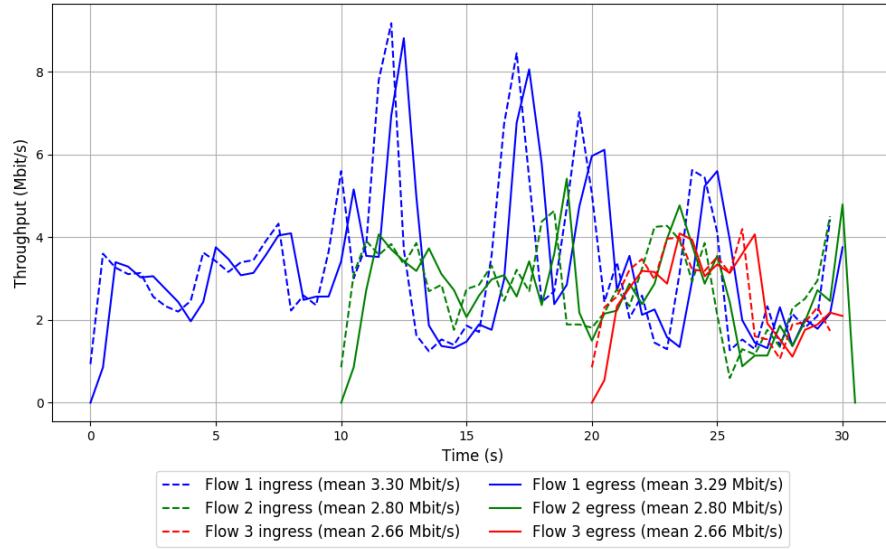


Run 3: Statistics of Copa

```
Start at: 2018-06-29 20:05:15
End at: 2018-06-29 20:05:45
Local clock offset: 2.923 ms
Remote clock offset: -7.695 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 110.707 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 3.29 Mbit/s
95th percentile per-packet one-way delay: 102.626 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 116.755 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 2.66 Mbit/s
95th percentile per-packet one-way delay: 114.592 ms
Loss rate: 0.15%
```

Run 3: Report of Copa — Data Link

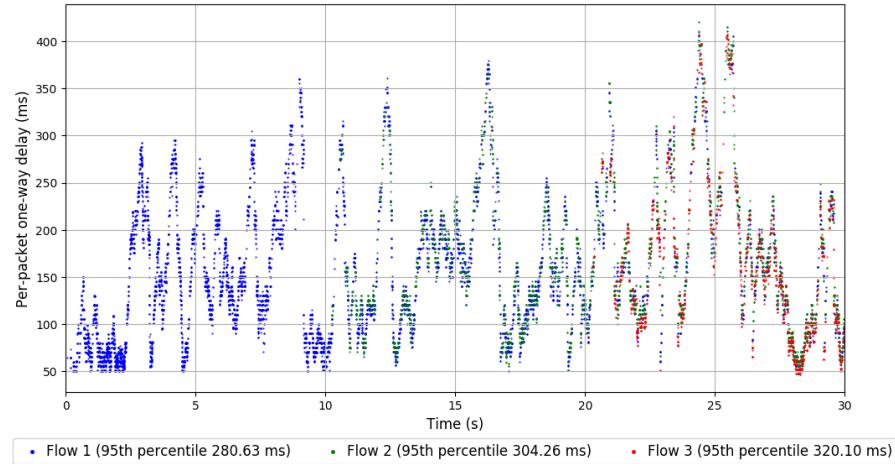
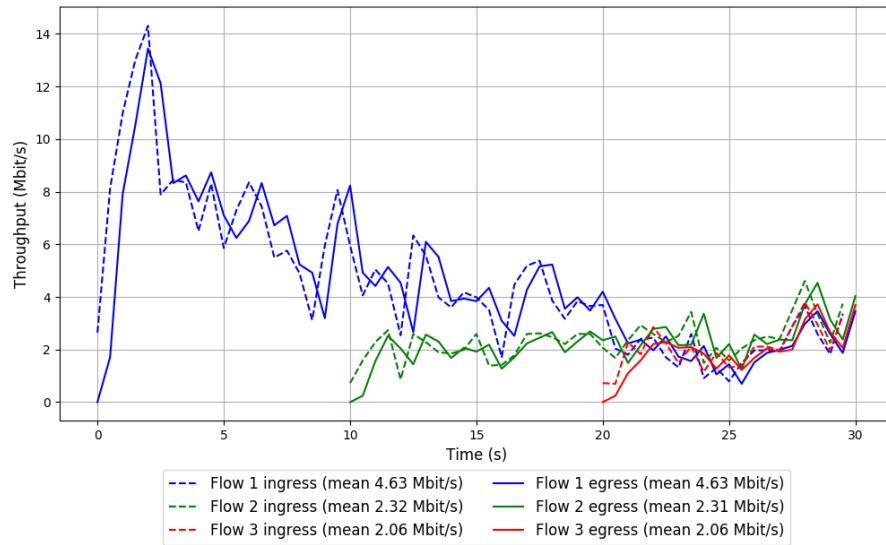


Run 1: Statistics of TCP Cubic

```
Start at: 2018-06-29 19:44:22
End at: 2018-06-29 19:44:52
Local clock offset: 2.774 ms
Remote clock offset: -2.016 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 289.870 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 4.63 Mbit/s
95th percentile per-packet one-way delay: 280.632 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 304.258 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 2.06 Mbit/s
95th percentile per-packet one-way delay: 320.101 ms
Loss rate: 0.94%
```

Run 1: Report of TCP Cubic — Data Link

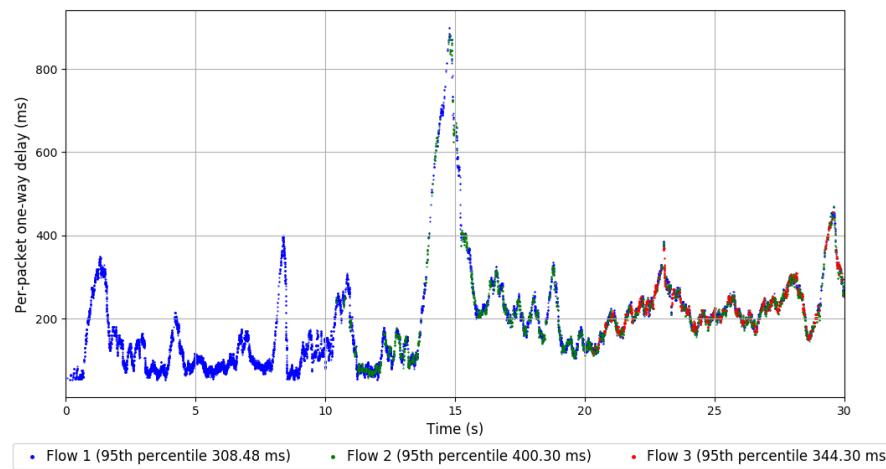
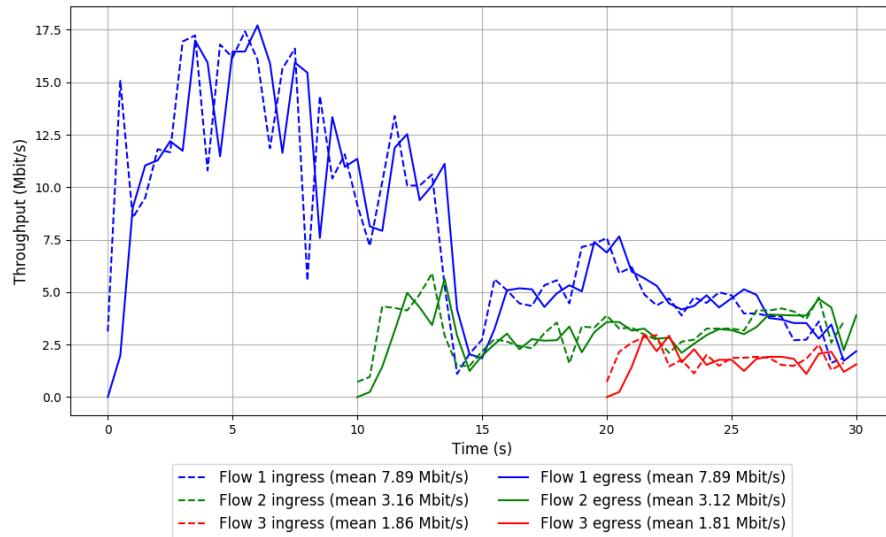


Run 2: Statistics of TCP Cubic

```
Start at: 2018-06-29 20:03:03
End at: 2018-06-29 20:03:33
Local clock offset: -2.104 ms
Remote clock offset: -7.321 ms

# Below is generated by plot.py at 2018-06-29 20:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.55 Mbit/s
95th percentile per-packet one-way delay: 319.127 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 308.481 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 400.303 ms
Loss rate: 1.58%
-- Flow 3:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 344.298 ms
Loss rate: 3.57%
```

Run 2: Report of TCP Cubic — Data Link

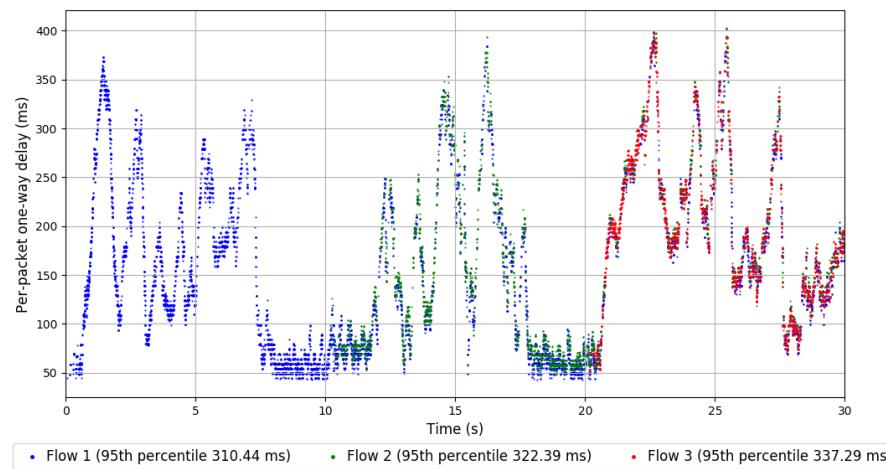
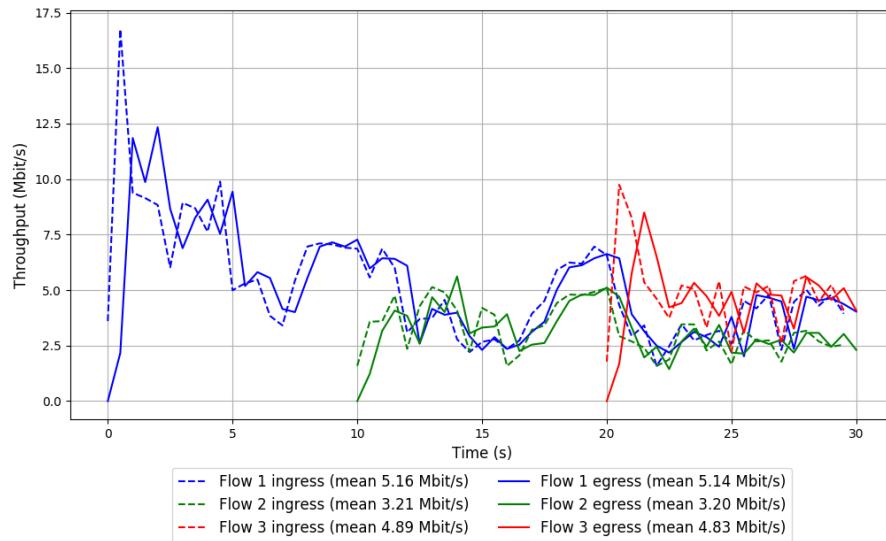


Run 3: Statistics of TCP Cubic

```
Start at: 2018-06-29 20:21:48
End at: 2018-06-29 20:22:18
Local clock offset: 0.18 ms
Remote clock offset: -3.493 ms

# Below is generated by plot.py at 2018-06-29 20:23:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.86 Mbit/s
95th percentile per-packet one-way delay: 319.510 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 5.14 Mbit/s
95th percentile per-packet one-way delay: 310.437 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 322.392 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 4.83 Mbit/s
95th percentile per-packet one-way delay: 337.294 ms
Loss rate: 1.78%
```

Run 3: Report of TCP Cubic — Data Link

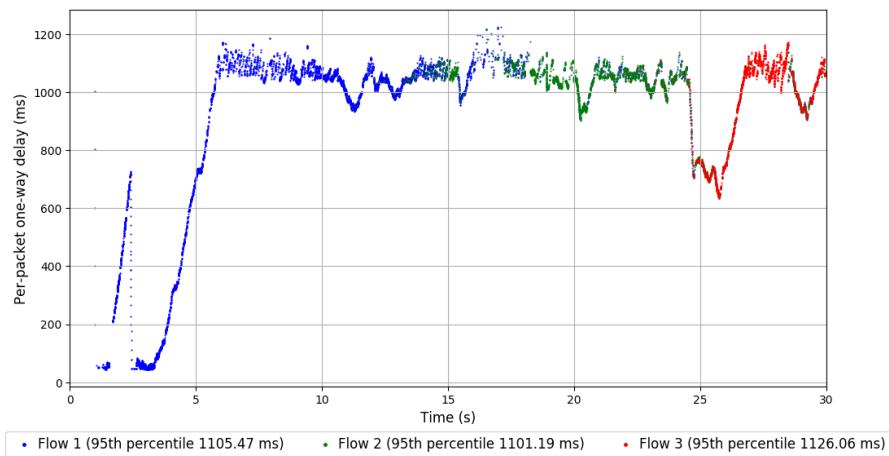
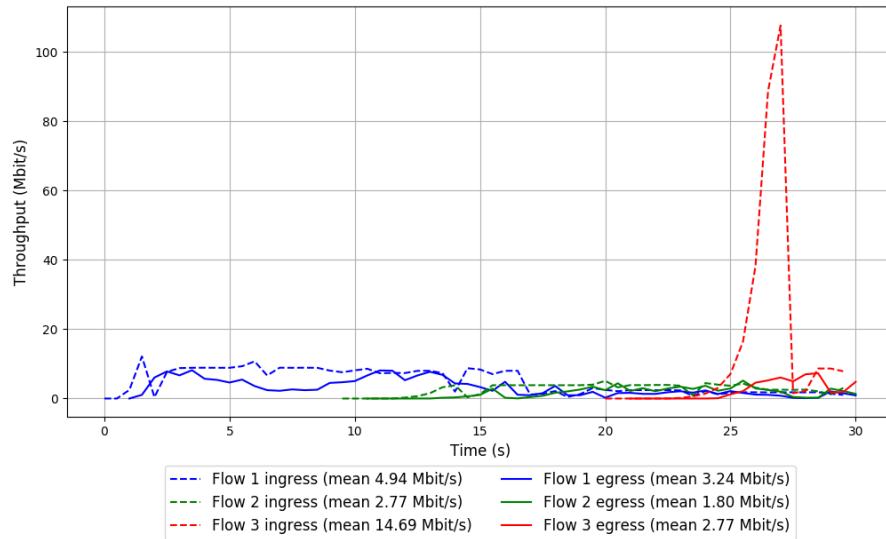


```
Run 1: Statistics of FillP

Start at: 2018-06-29 19:41:04
End at: 2018-06-29 19:41:34
Local clock offset: 2.964 ms
Remote clock offset: -3.731 ms

# Below is generated by plot.py at 2018-06-29 20:23:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 1107.773 ms
Loss rate: 56.68%
-- Flow 1:
Average throughput: 3.24 Mbit/s
95th percentile per-packet one-way delay: 1105.466 ms
Loss rate: 36.67%
-- Flow 2:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 1101.194 ms
Loss rate: 38.33%
-- Flow 3:
Average throughput: 2.77 Mbit/s
95th percentile per-packet one-way delay: 1126.060 ms
Loss rate: 83.90%
```

Run 1: Report of FillP — Data Link

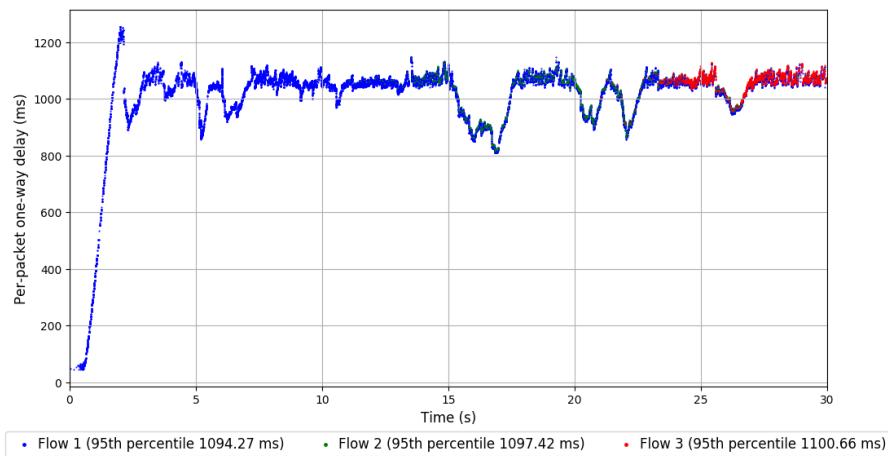
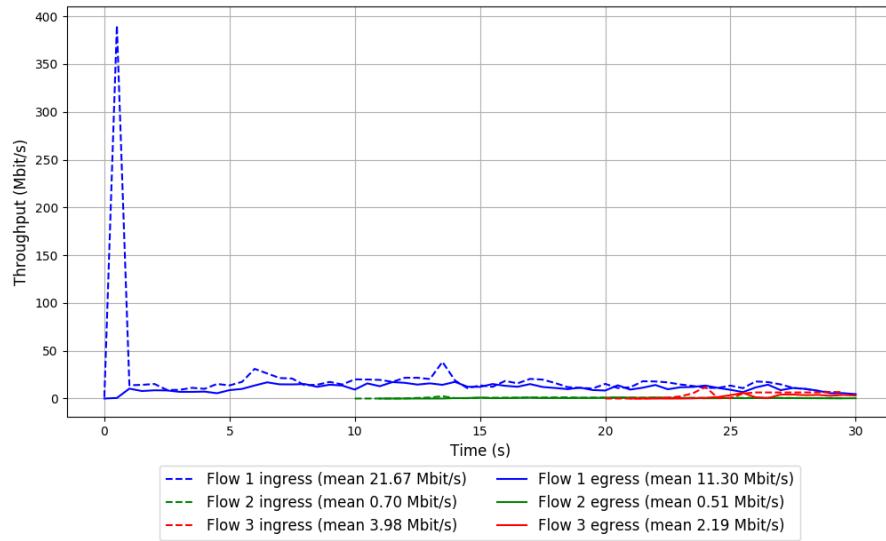


Run 2: Statistics of FillP

```
Start at: 2018-06-29 19:59:44
End at: 2018-06-29 20:00:14
Local clock offset: 1.202 ms
Remote clock offset: -6.225 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.28 Mbit/s
95th percentile per-packet one-way delay: 1094.958 ms
Loss rate: 47.70%
-- Flow 1:
Average throughput: 11.30 Mbit/s
95th percentile per-packet one-way delay: 1094.270 ms
Loss rate: 47.90%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 1097.419 ms
Loss rate: 30.00%
-- Flow 3:
Average throughput: 2.19 Mbit/s
95th percentile per-packet one-way delay: 1100.661 ms
Loss rate: 50.60%
```

Run 2: Report of FillP — Data Link

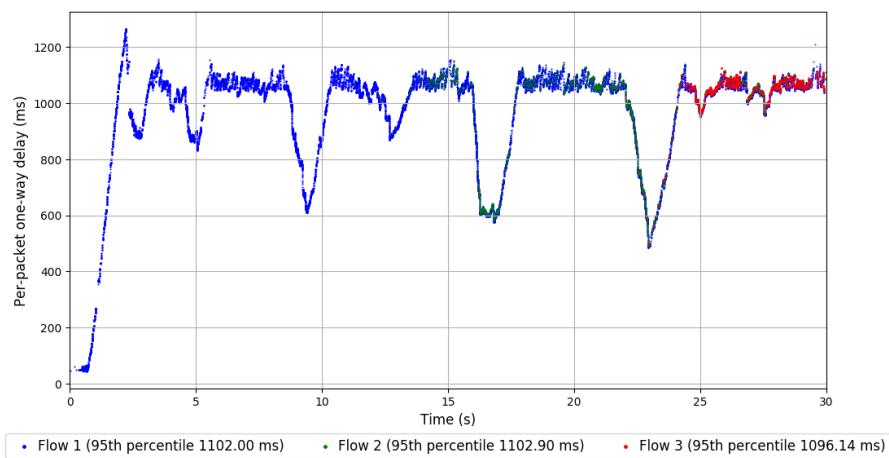
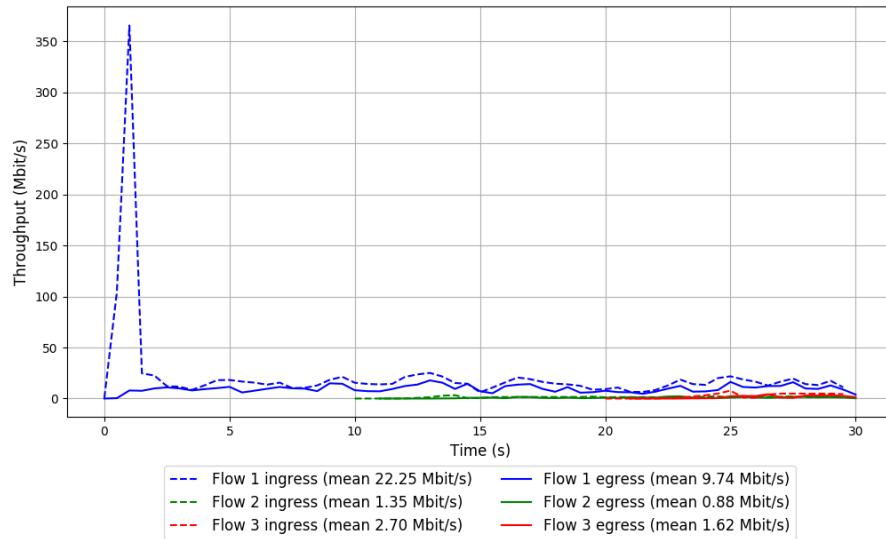


```
Run 3: Statistics of FillP
```

```
Start at: 2018-06-29 20:18:30
End at: 2018-06-29 20:19:00
Local clock offset: 1.992 ms
Remote clock offset: -5.386 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.74 Mbit/s
95th percentile per-packet one-way delay: 1101.706 ms
Loss rate: 55.37%
-- Flow 1:
Average throughput: 9.74 Mbit/s
95th percentile per-packet one-way delay: 1101.997 ms
Loss rate: 56.31%
-- Flow 2:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 1102.905 ms
Loss rate: 38.67%
-- Flow 3:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 1096.145 ms
Loss rate: 48.79%
```

Run 3: Report of FillP — Data Link

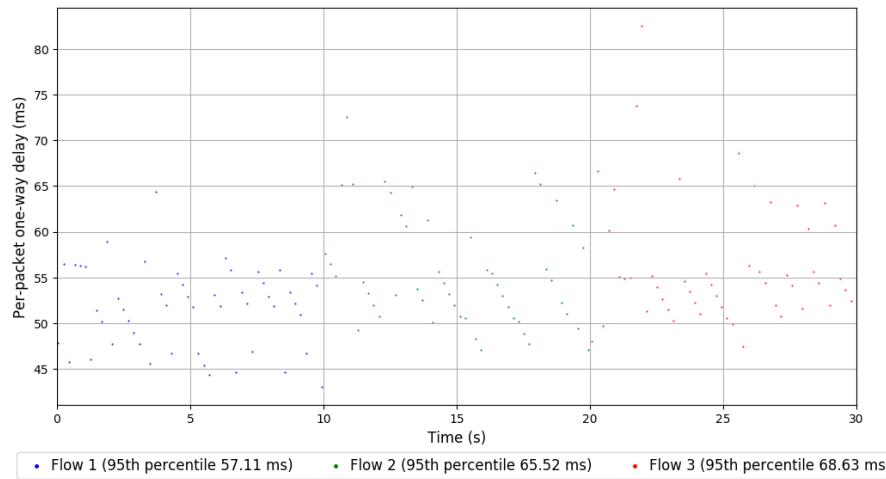
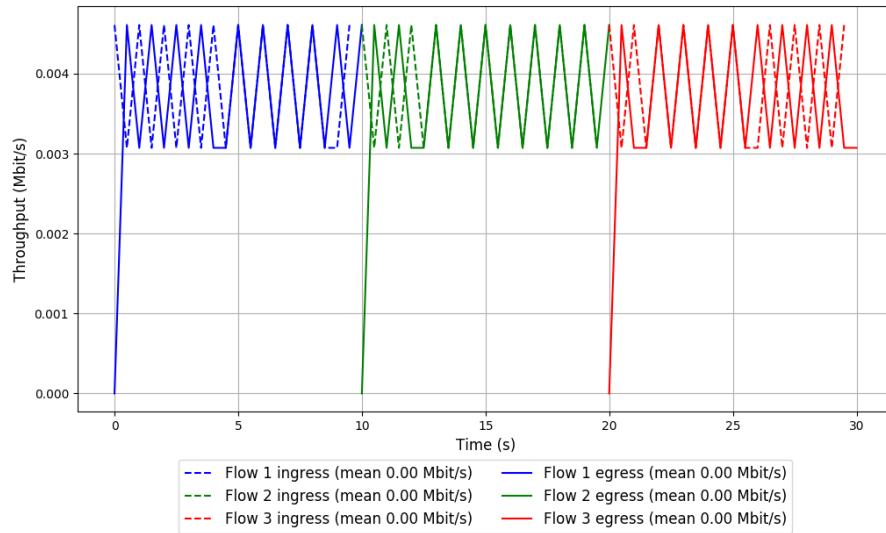


Run 1: Statistics of FillP-Sheep

```
Start at: 2018-06-29 19:30:06
End at: 2018-06-29 19:30:36
Local clock offset: -0.505 ms
Remote clock offset: -3.147 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 65.517 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 57.114 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 65.517 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 68.627 ms
Loss rate: 2.00%
```

Run 1: Report of FillP-Sheep — Data Link

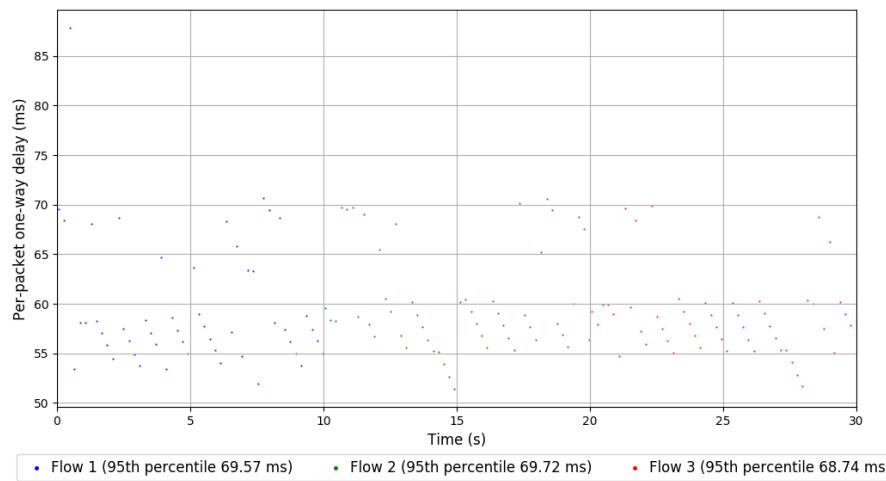
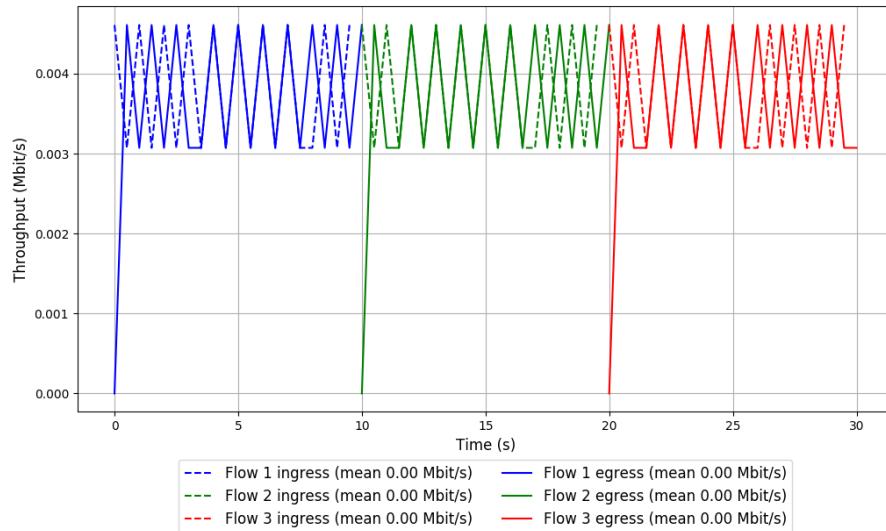


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-06-29 19:48:46
End at: 2018-06-29 19:49:16
Local clock offset: -0.814 ms
Remote clock offset: -3.913 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 69.596 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 69.572 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 69.715 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 68.737 ms
Loss rate: 2.00%
```

Run 2: Report of FillP-Sheep — Data Link

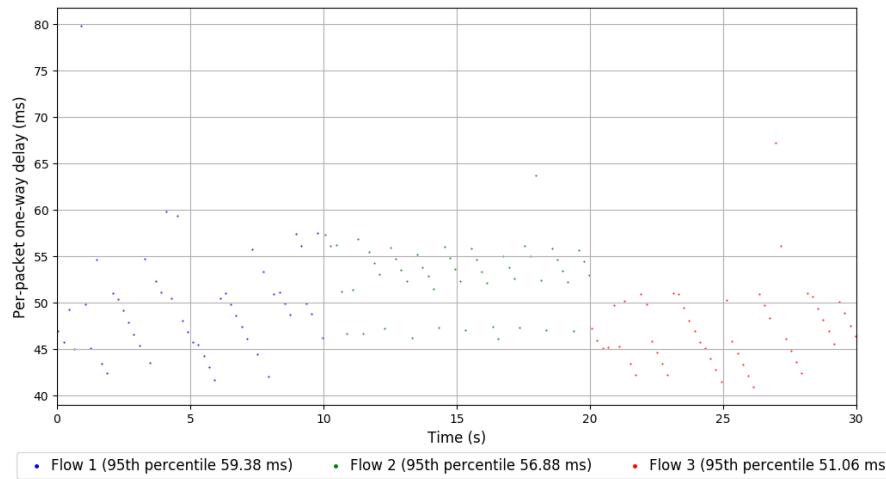
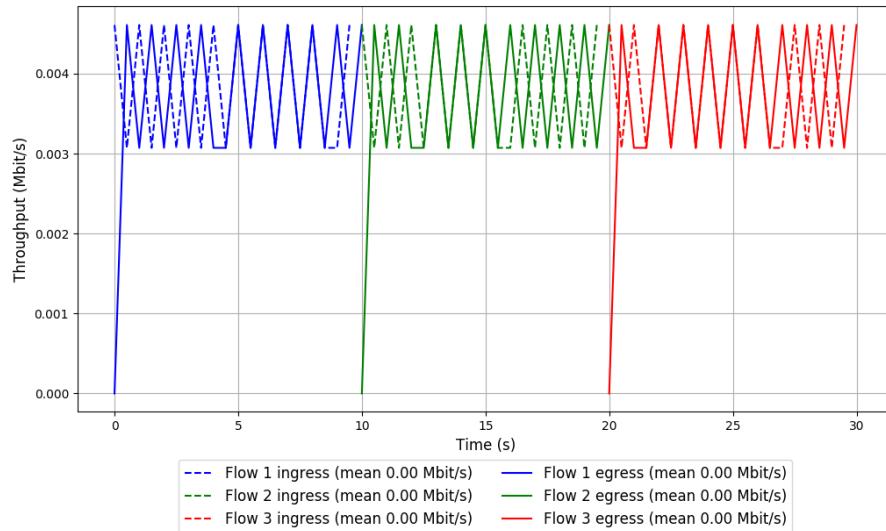


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-06-29 20:07:32
End at: 2018-06-29 20:08:02
Local clock offset: 1.784 ms
Remote clock offset: -7.374 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 57.324 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 59.378 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 56.880 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 51.064 ms
Loss rate: 0.00%
```

Run 3: Report of FillP-Sheep — Data Link

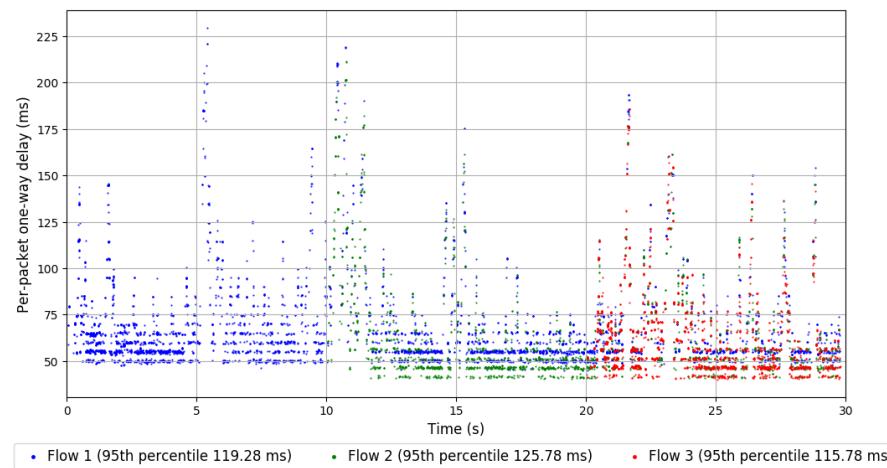
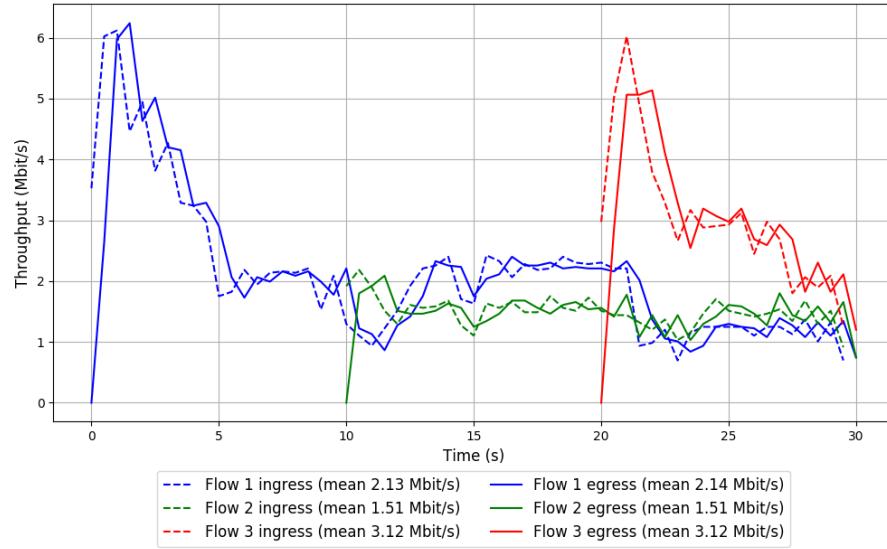


Run 1: Statistics of Indigo

```
Start at: 2018-06-29 19:36:40
End at: 2018-06-29 19:37:10
Local clock offset: 1.895 ms
Remote clock offset: -3.787 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 120.335 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 119.284 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 125.775 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 115.777 ms
Loss rate: 0.35%
```

Run 1: Report of Indigo — Data Link

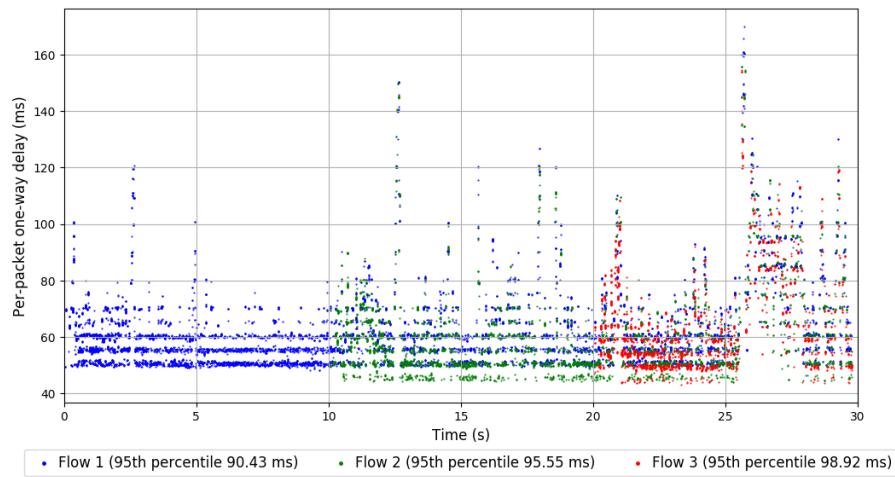
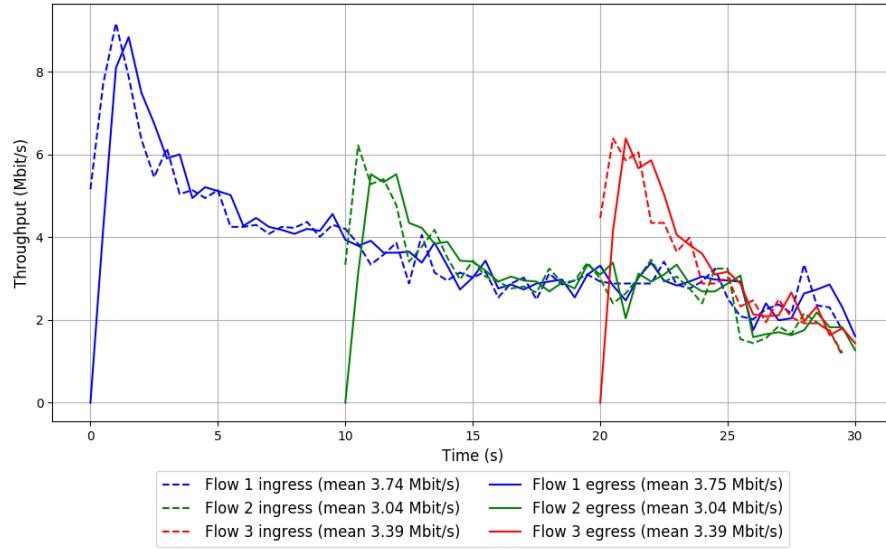


Run 2: Statistics of Indigo

```
Start at: 2018-06-29 19:55:20
End at: 2018-06-29 19:55:50
Local clock offset: 0.002 ms
Remote clock offset: -6.775 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.87 Mbit/s
95th percentile per-packet one-way delay: 94.016 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 3.75 Mbit/s
95th percentile per-packet one-way delay: 90.431 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 95.552 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 98.916 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

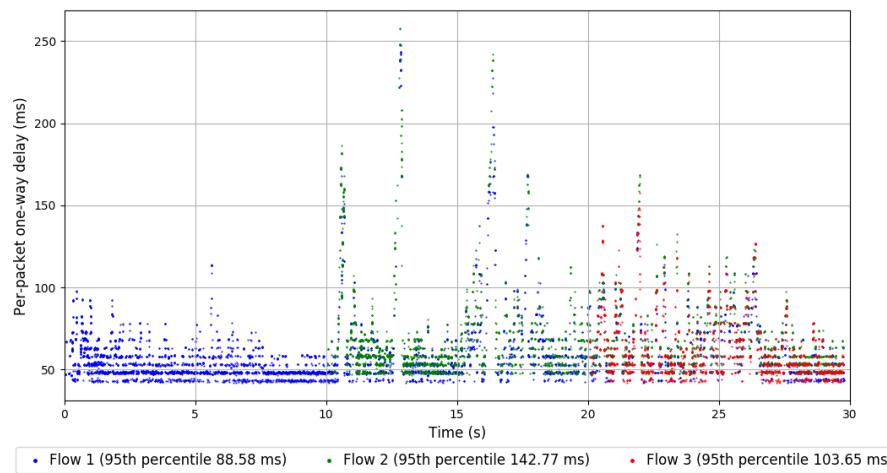
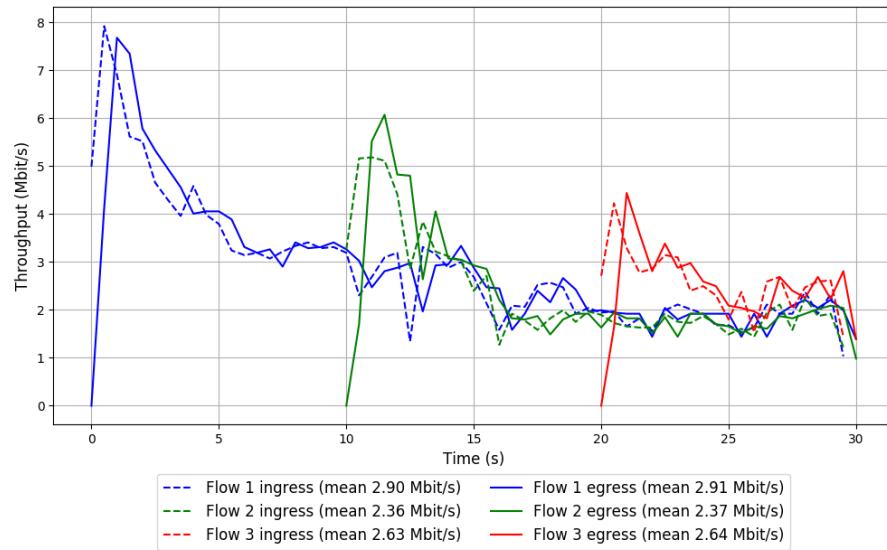


Run 3: Statistics of Indigo

```
Start at: 2018-06-29 20:14:06
End at: 2018-06-29 20:14:36
Local clock offset: 1.654 ms
Remote clock offset: -8.231 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.33 Mbit/s
95th percentile per-packet one-way delay: 107.173 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 88.581 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 142.768 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 2.64 Mbit/s
95th percentile per-packet one-way delay: 103.651 ms
Loss rate: 0.47%
```

Run 3: Report of Indigo — Data Link

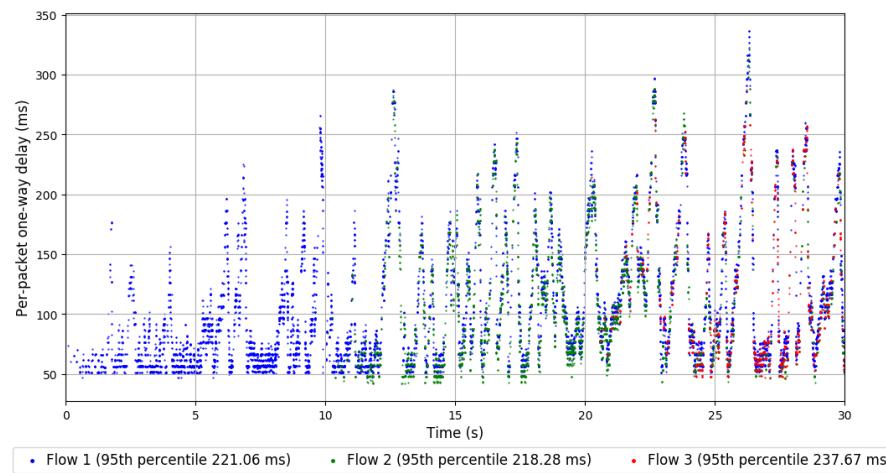
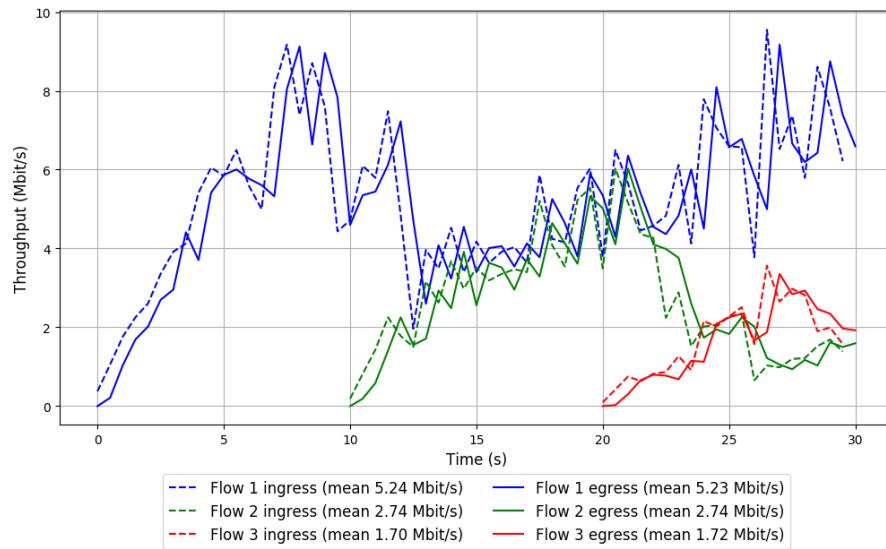


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-06-29 19:35:34
End at: 2018-06-29 19:36:04
Local clock offset: 1.304 ms
Remote clock offset: -3.252 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.61 Mbit/s
95th percentile per-packet one-way delay: 222.118 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 221.056 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 2.74 Mbit/s
95th percentile per-packet one-way delay: 218.285 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 237.668 ms
Loss rate: 0.62%
```

Run 1: Report of LEDBAT — Data Link

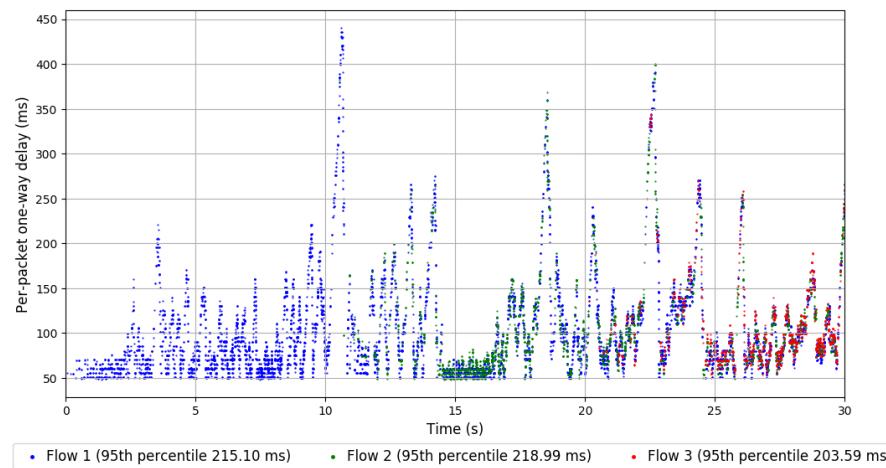
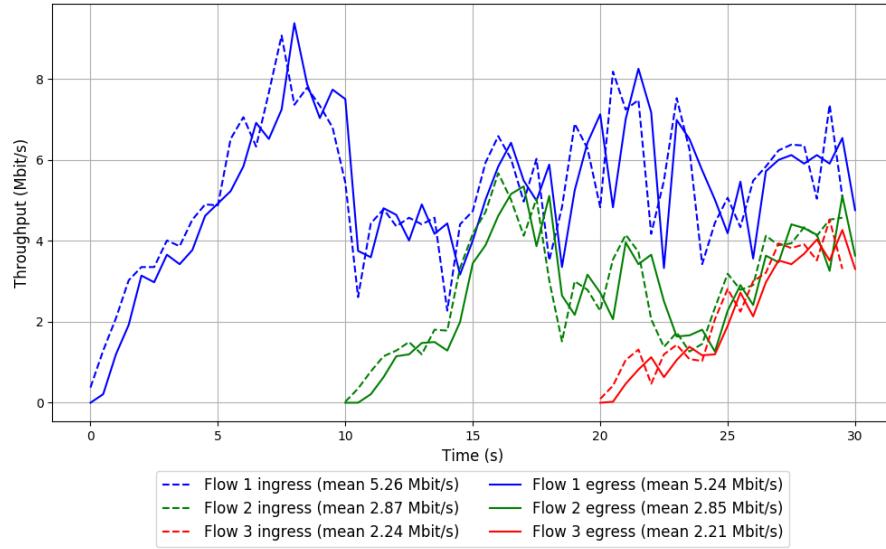


Run 2: Statistics of LEDBAT

```
Start at: 2018-06-29 19:54:14
End at: 2018-06-29 19:54:44
Local clock offset: 0.644 ms
Remote clock offset: -5.904 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 215.195 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 215.104 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 2.85 Mbit/s
95th percentile per-packet one-way delay: 218.988 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 203.593 ms
Loss rate: 2.48%
```

Run 2: Report of LEDBAT — Data Link

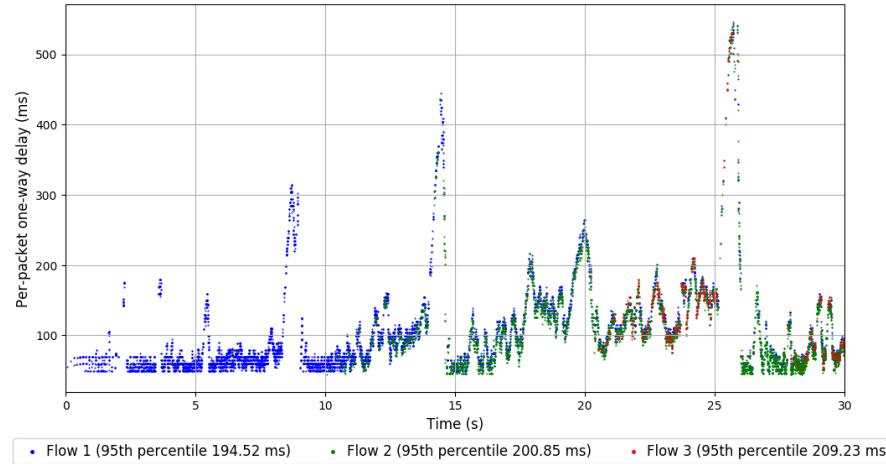
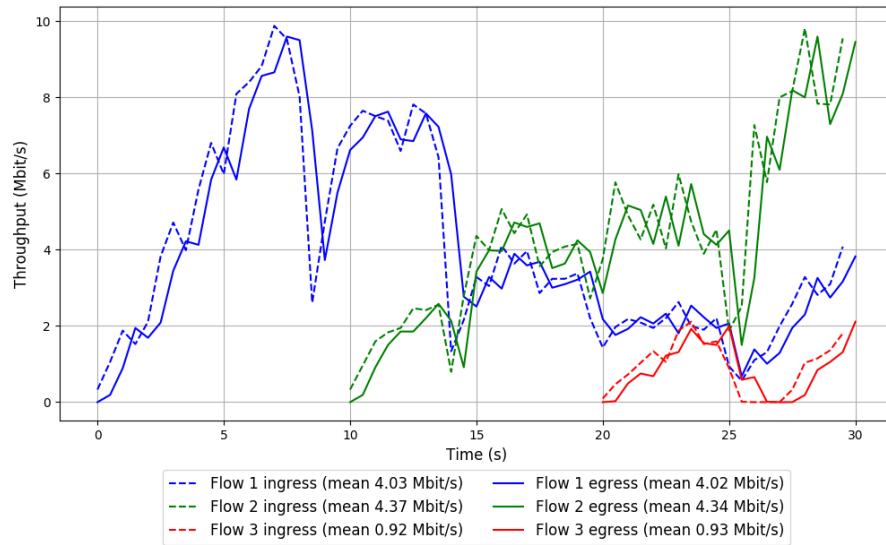


Run 3: Statistics of LEDBAT

```
Start at: 2018-06-29 20:13:00
End at: 2018-06-29 20:13:30
Local clock offset: 0.71 ms
Remote clock offset: -7.718 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.21 Mbit/s
95th percentile per-packet one-way delay: 199.376 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 194.524 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 4.34 Mbit/s
95th percentile per-packet one-way delay: 200.847 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 209.230 ms
Loss rate: 1.02%
```

Run 3: Report of LEDBAT — Data Link

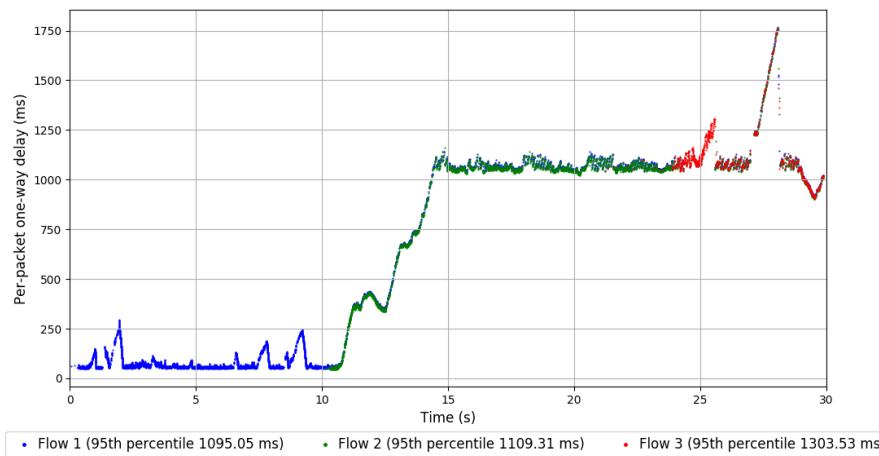
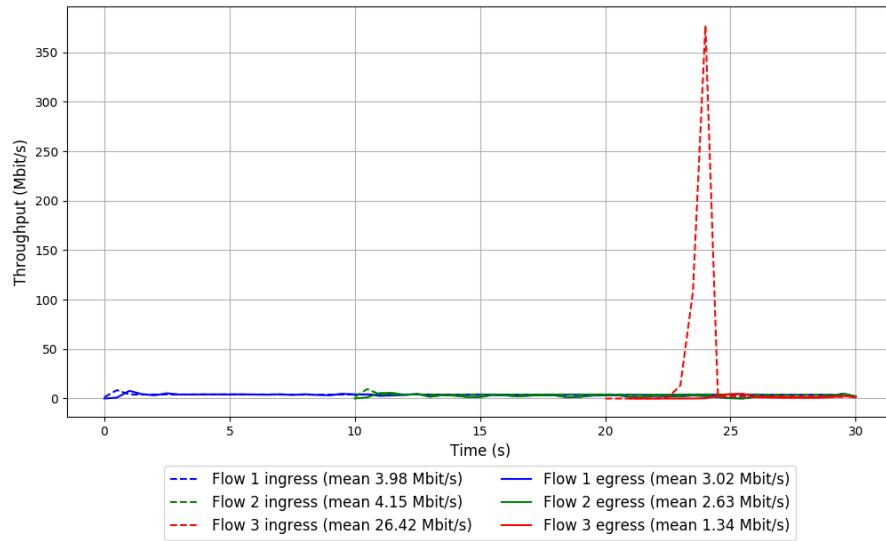


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-06-29 19:39:58
End at: 2018-06-29 19:40:28
Local clock offset: 0.34 ms
Remote clock offset: -2.471 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.15 Mbit/s
95th percentile per-packet one-way delay: 1115.840 ms
Loss rate: 66.73%
-- Flow 1:
Average throughput: 3.02 Mbit/s
95th percentile per-packet one-way delay: 1095.053 ms
Loss rate: 24.20%
-- Flow 2:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 1109.310 ms
Loss rate: 36.79%
-- Flow 3:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 1303.526 ms
Loss rate: 95.61%
```

Run 1: Report of PCC-Allegro — Data Link

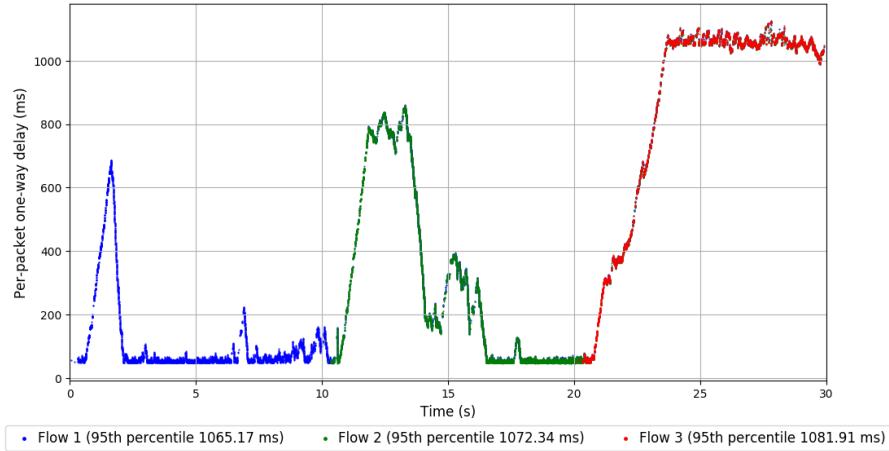
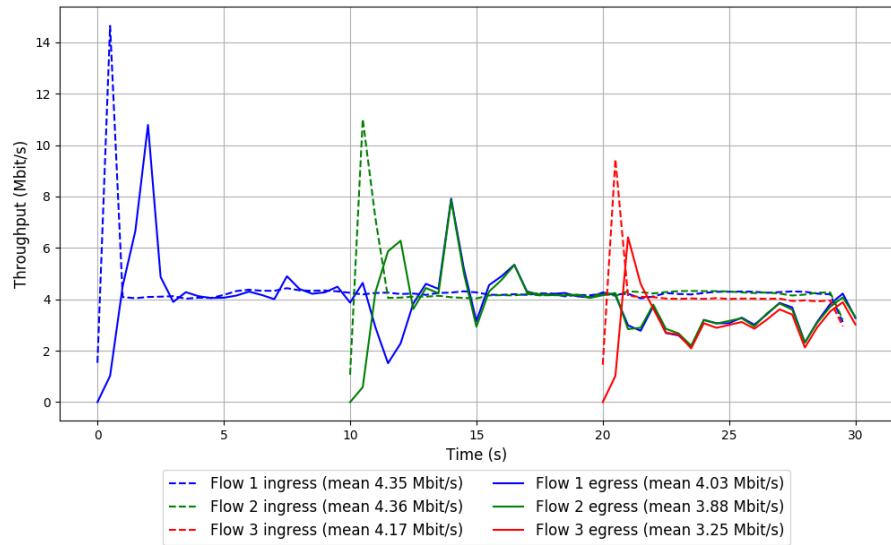


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-06-29 19:58:39
End at: 2018-06-29 19:59:09
Local clock offset: 1.049 ms
Remote clock offset: -7.01 ms

# Below is generated by plot.py at 2018-06-29 20:24:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 1072.494 ms
Loss rate: 11.31%
-- Flow 1:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 1065.175 ms
Loss rate: 7.58%
-- Flow 2:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 1072.335 ms
Loss rate: 11.63%
-- Flow 3:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 1081.909 ms
Loss rate: 22.45%
```

Run 2: Report of PCC-Allegro — Data Link

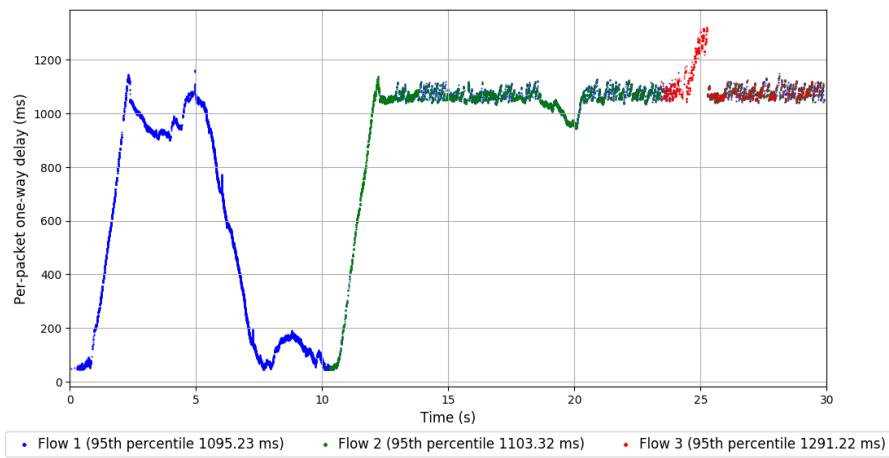
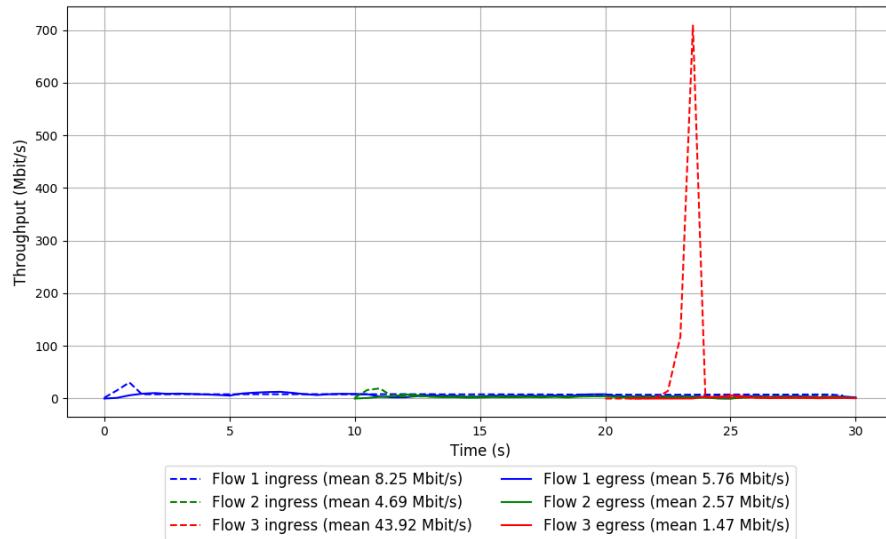


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-06-29 20:17:24
End at: 2018-06-29 20:17:54
Local clock offset: 0.6 ms
Remote clock offset: -5.787 ms

# Below is generated by plot.py at 2018-06-29 20:24:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: 1106.378 ms
Loss rate: 69.45%
-- Flow 1:
Average throughput: 5.76 Mbit/s
95th percentile per-packet one-way delay: 1095.227 ms
Loss rate: 30.18%
-- Flow 2:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 1103.319 ms
Loss rate: 45.26%
-- Flow 3:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 1291.222 ms
Loss rate: 97.01%
```

Run 3: Report of PCC-Allegro — Data Link

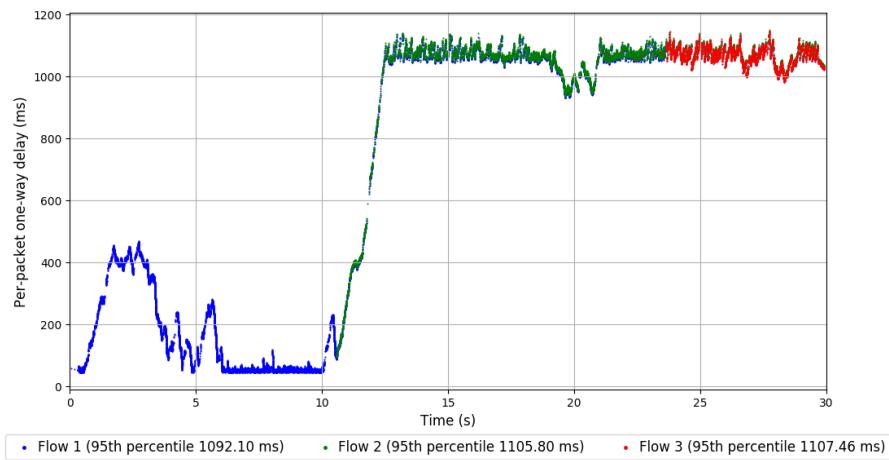
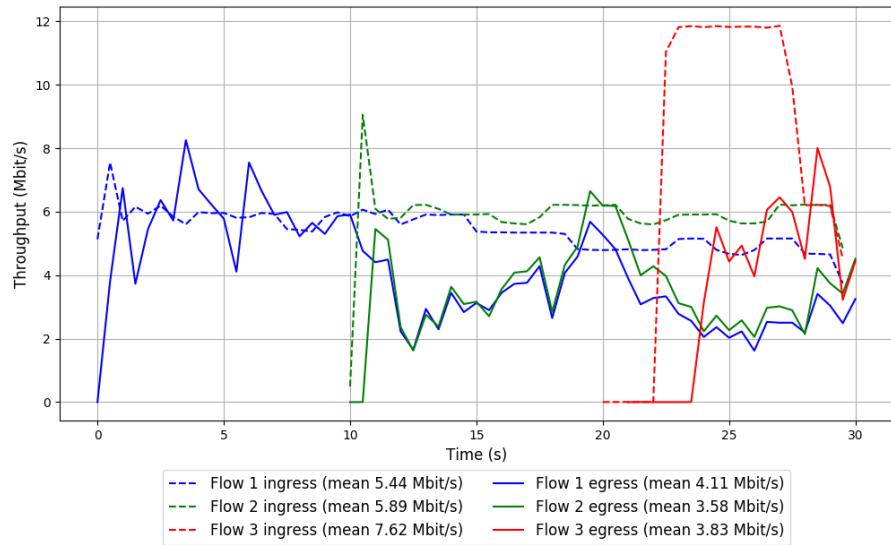


```
Run 1: Statistics of PCC-Expr

Start at: 2018-06-29 19:42:09
End at: 2018-06-29 19:42:39
Local clock offset: -1.907 ms
Remote clock offset: -2.69 ms

# Below is generated by plot.py at 2018-06-29 20:24:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.62 Mbit/s
95th percentile per-packet one-way delay: 1100.783 ms
Loss rate: 35.94%
-- Flow 1:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 1092.095 ms
Loss rate: 24.52%
-- Flow 2:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 1105.800 ms
Loss rate: 39.40%
-- Flow 3:
Average throughput: 3.83 Mbit/s
95th percentile per-packet one-way delay: 1107.461 ms
Loss rate: 55.20%
```

Run 1: Report of PCC-Expr — Data Link

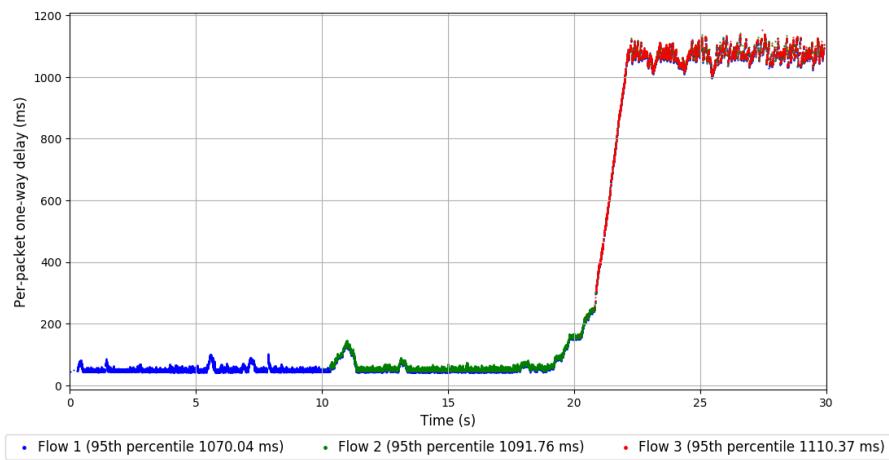
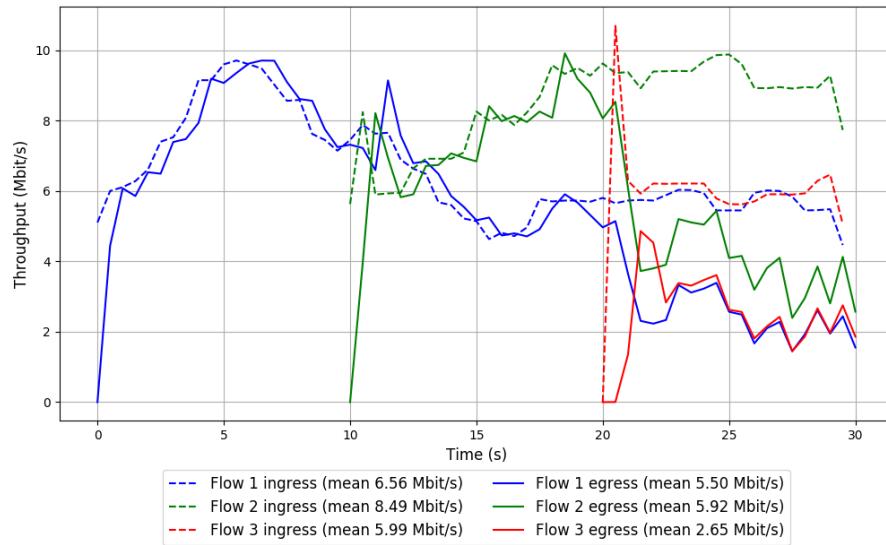


Run 2: Statistics of PCC-Expr

```
Start at: 2018-06-29 20:00:51
End at: 2018-06-29 20:01:21
Local clock offset: 1.57 ms
Remote clock offset: -7.147 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.30 Mbit/s
95th percentile per-packet one-way delay: 1087.952 ms
Loss rate: 27.49%
-- Flow 1:
Average throughput: 5.50 Mbit/s
95th percentile per-packet one-way delay: 1070.040 ms
Loss rate: 16.23%
-- Flow 2:
Average throughput: 5.92 Mbit/s
95th percentile per-packet one-way delay: 1091.763 ms
Loss rate: 30.43%
-- Flow 3:
Average throughput: 2.65 Mbit/s
95th percentile per-packet one-way delay: 1110.367 ms
Loss rate: 56.42%
```

Run 2: Report of PCC-Expr — Data Link

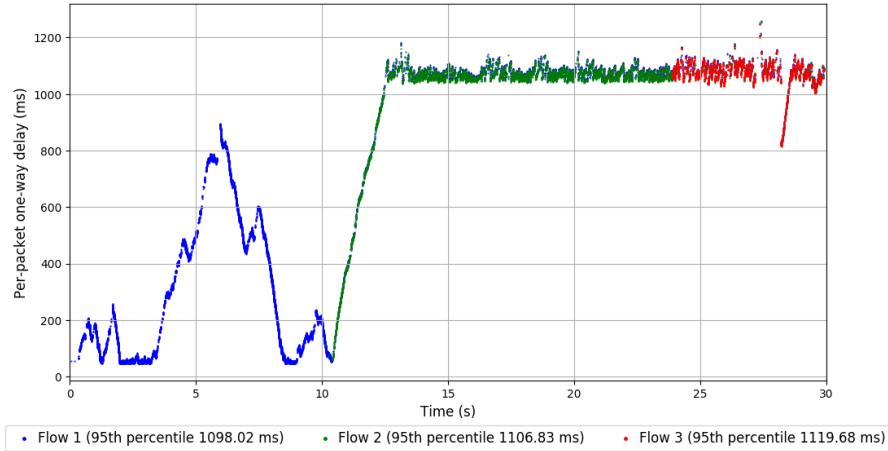
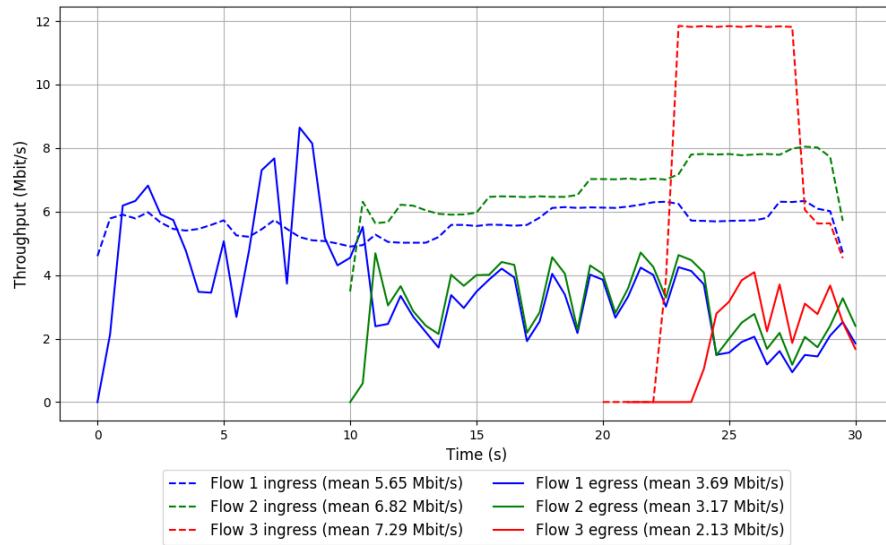


Run 3: Statistics of PCC-Expr

```
Start at: 2018-06-29 20:19:36
End at: 2018-06-29 20:20:06
Local clock offset: 2.384 ms
Remote clock offset: -4.309 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 1105.820 ms
Loss rate: 49.23%
-- Flow 1:
Average throughput: 3.69 Mbit/s
95th percentile per-packet one-way delay: 1098.019 ms
Loss rate: 34.76%
-- Flow 2:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 1106.829 ms
Loss rate: 53.73%
-- Flow 3:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 1119.680 ms
Loss rate: 74.68%
```

Run 3: Report of PCC-Expr — Data Link

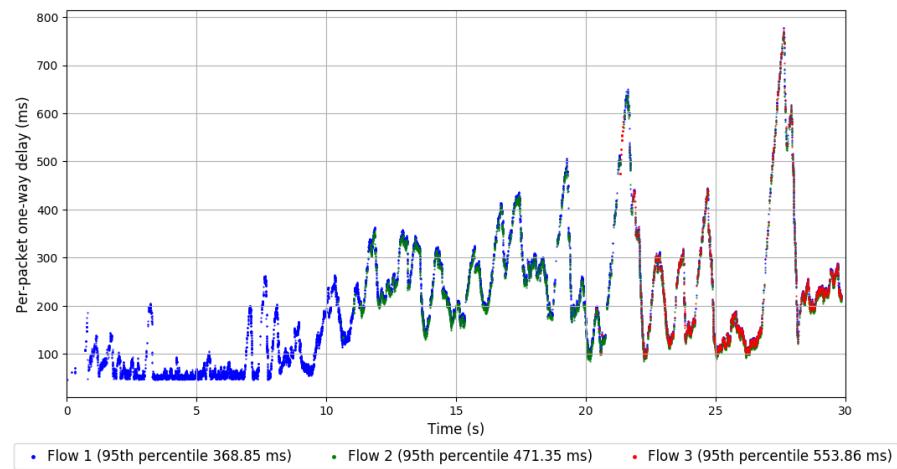
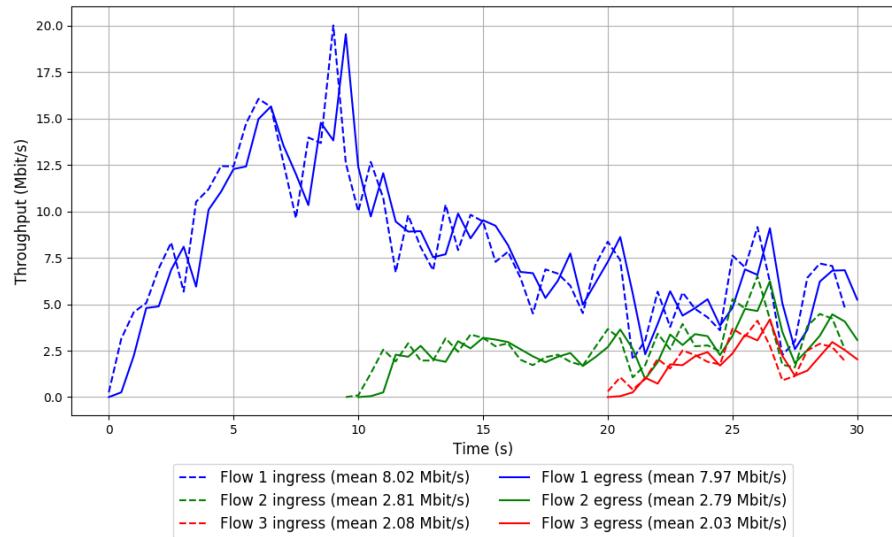


```
Run 1: Statistics of QUIC Cubic

Start at: 2018-06-29 19:37:45
End at: 2018-06-29 19:38:15
Local clock offset: 1.774 ms
Remote clock offset: -2.987 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.48 Mbit/s
95th percentile per-packet one-way delay: 405.999 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 7.97 Mbit/s
95th percentile per-packet one-way delay: 368.848 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 2.79 Mbit/s
95th percentile per-packet one-way delay: 471.346 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 553.856 ms
Loss rate: 3.28%
```

Run 1: Report of QUIC Cubic — Data Link

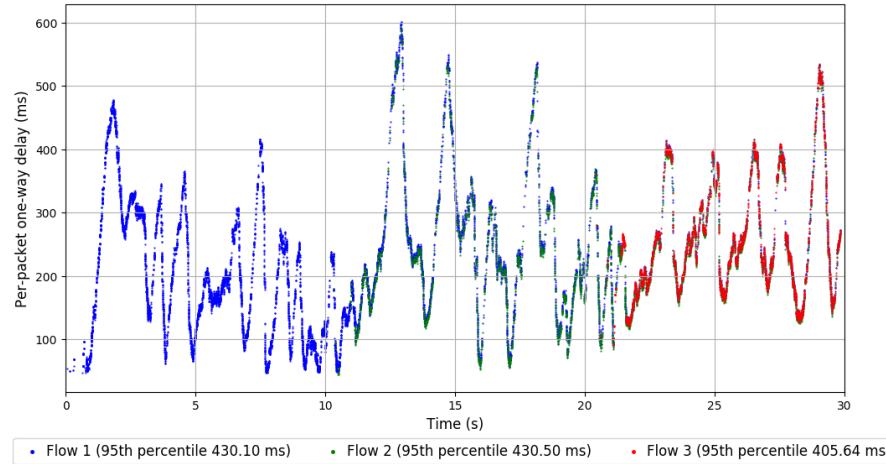
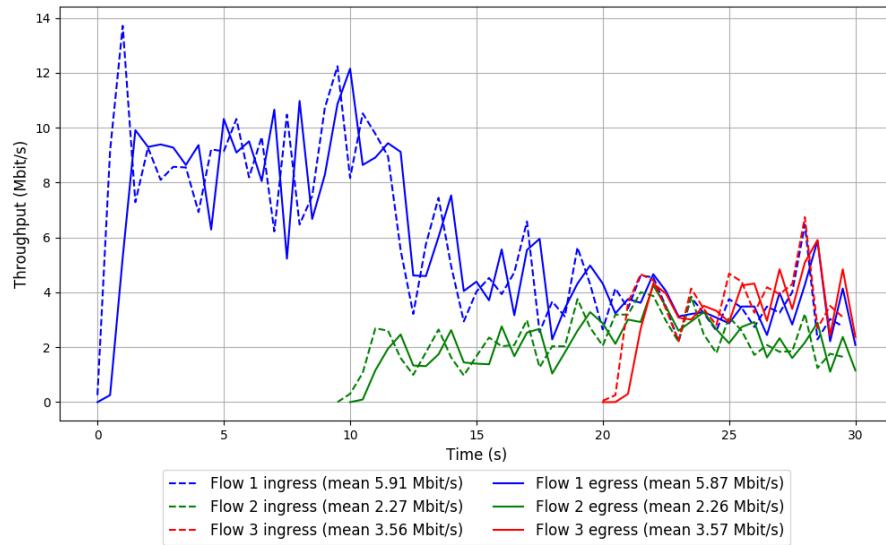


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-06-29 19:56:26
End at: 2018-06-29 19:56:56
Local clock offset: 1.127 ms
Remote clock offset: -6.081 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.49 Mbit/s
95th percentile per-packet one-way delay: 427.538 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 5.87 Mbit/s
95th percentile per-packet one-way delay: 430.095 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 430.498 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 405.637 ms
Loss rate: 3.24%
```

Run 2: Report of QUIC Cubic — Data Link

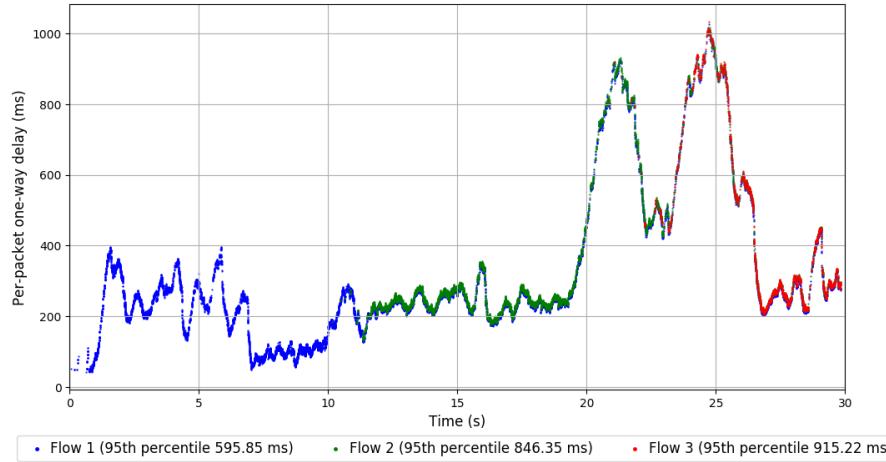
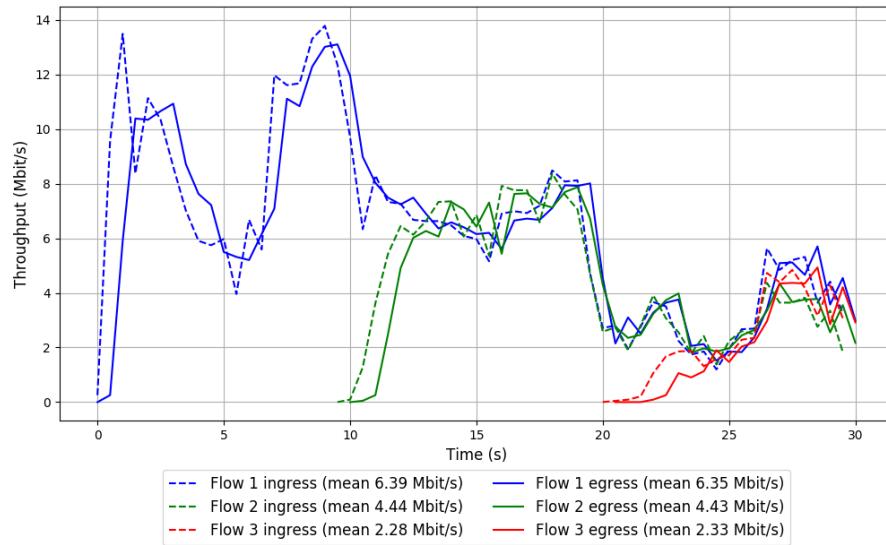


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-06-29 20:15:12
End at: 2018-06-29 20:15:42
Local clock offset: 1.783 ms
Remote clock offset: -7.144 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.98 Mbit/s
95th percentile per-packet one-way delay: 796.869 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 6.35 Mbit/s
95th percentile per-packet one-way delay: 595.850 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 4.43 Mbit/s
95th percentile per-packet one-way delay: 846.351 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 915.220 ms
Loss rate: 6.17%
```

Run 3: Report of QUIC Cubic — Data Link

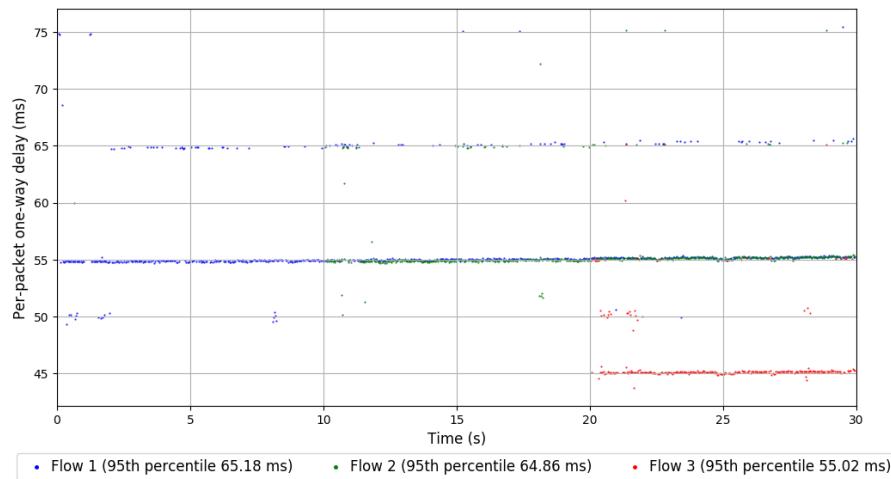
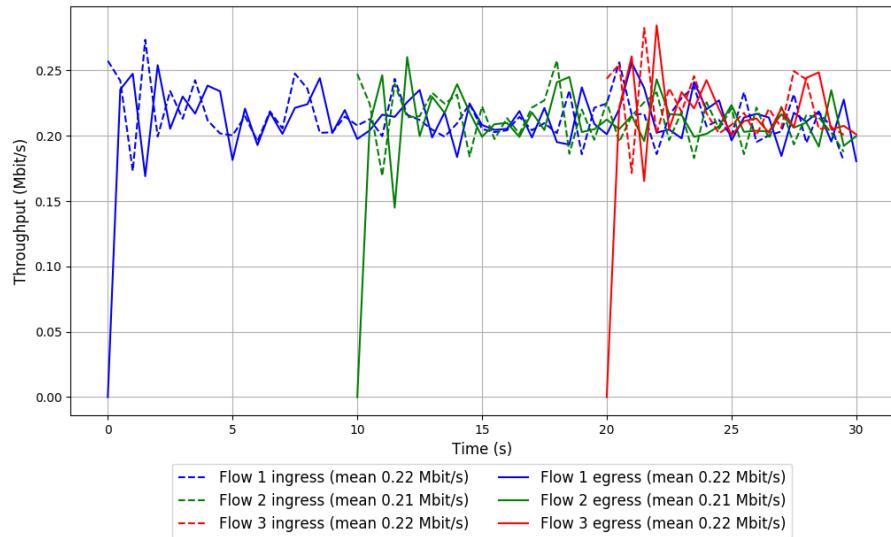


```
Run 1: Statistics of SCReAM

Start at: 2018-06-29 19:43:17
End at: 2018-06-29 19:43:47
Local clock offset: 0.741 ms
Remote clock offset: -2.888 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 65.047 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 65.177 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 64.861 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.019 ms
Loss rate: 0.35%
```

Run 1: Report of SCReAM — Data Link

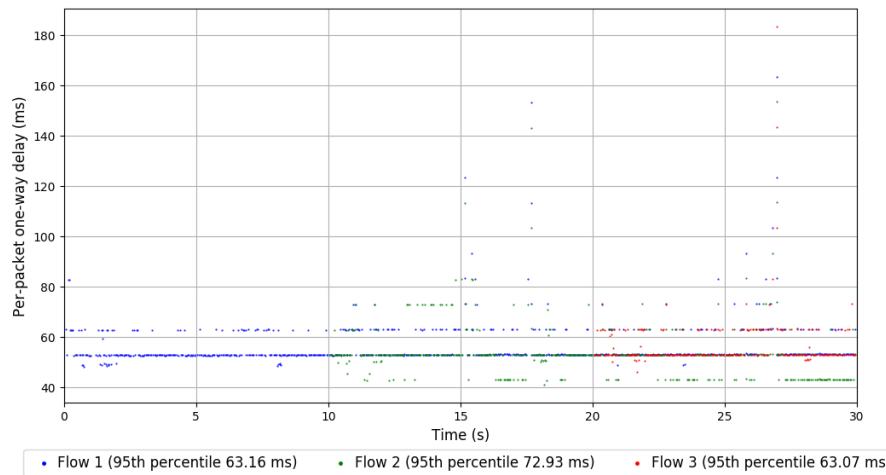
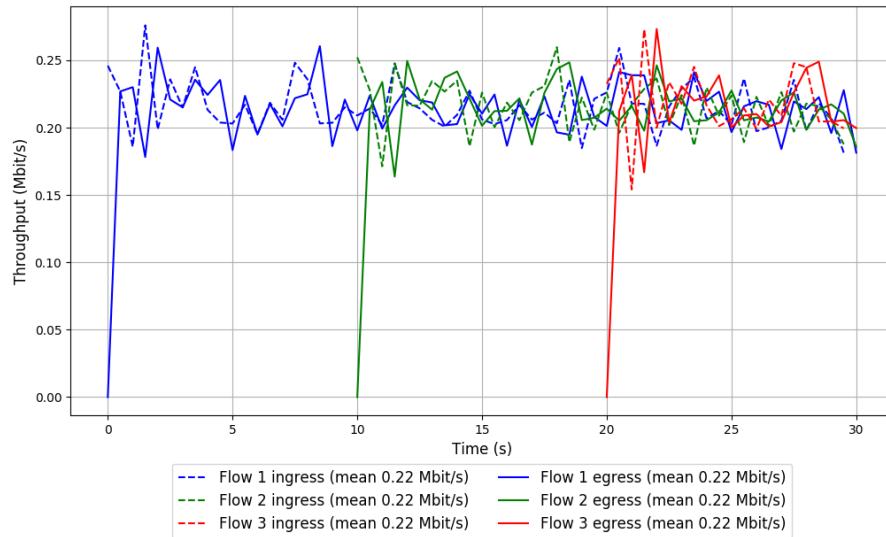


Run 2: Statistics of SCReAM

```
Start at: 2018-06-29 20:01:57
End at: 2018-06-29 20:02:27
Local clock offset: 2.094 ms
Remote clock offset: -7.096 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.479 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.158 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 72.932 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.073 ms
Loss rate: 0.35%
```

Run 2: Report of SCReAM — Data Link

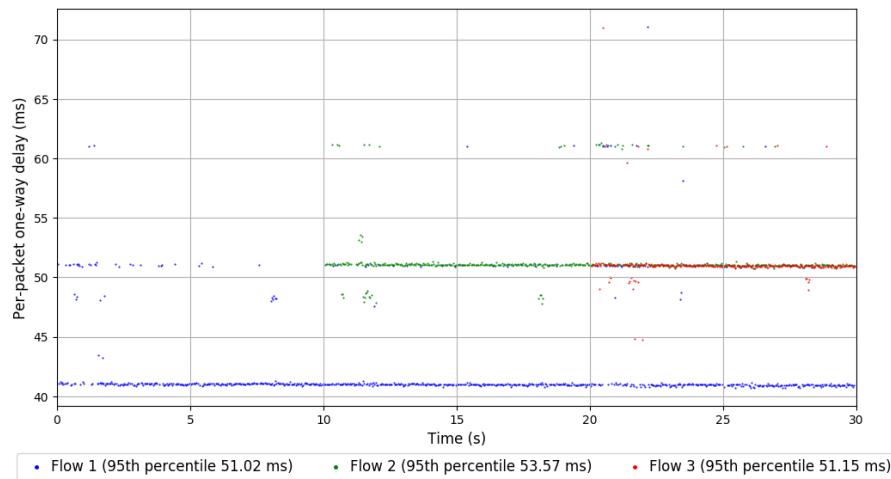
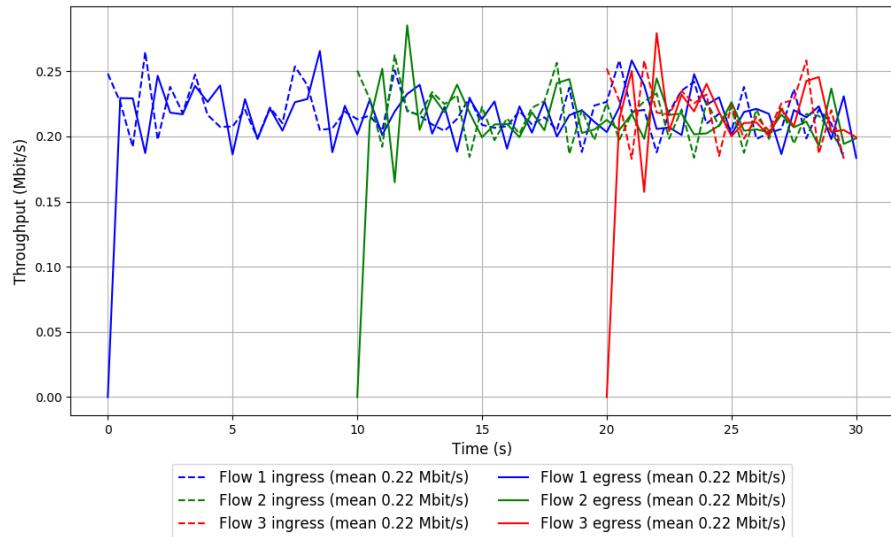


Run 3: Statistics of SCReAM

```
Start at: 2018-06-29 20:20:42
End at: 2018-06-29 20:21:12
Local clock offset: 3.661 ms
Remote clock offset: -4.164 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 51.177 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.016 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 53.566 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.150 ms
Loss rate: 0.35%
```

Run 3: Report of SCReAM — Data Link

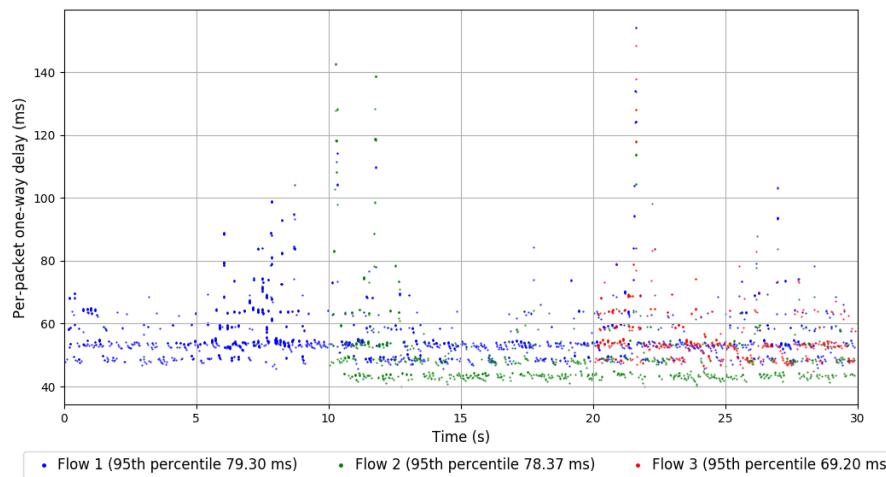
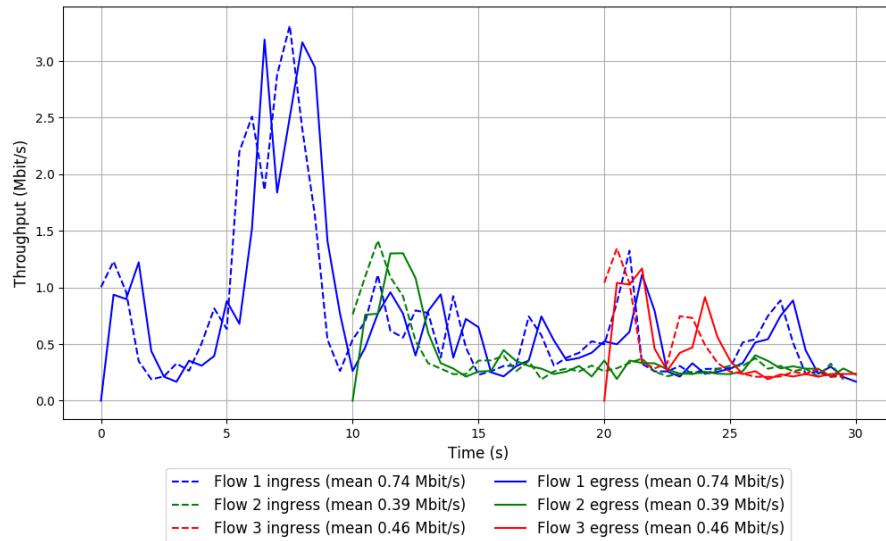


Run 1: Statistics of Sprout

```
Start at: 2018-06-29 19:34:29
End at: 2018-06-29 19:34:59
Local clock offset: 3.472 ms
Remote clock offset: -2.361 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 78.641 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 79.300 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 78.372 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 69.201 ms
Loss rate: 0.50%
```

Run 1: Report of Sprout — Data Link

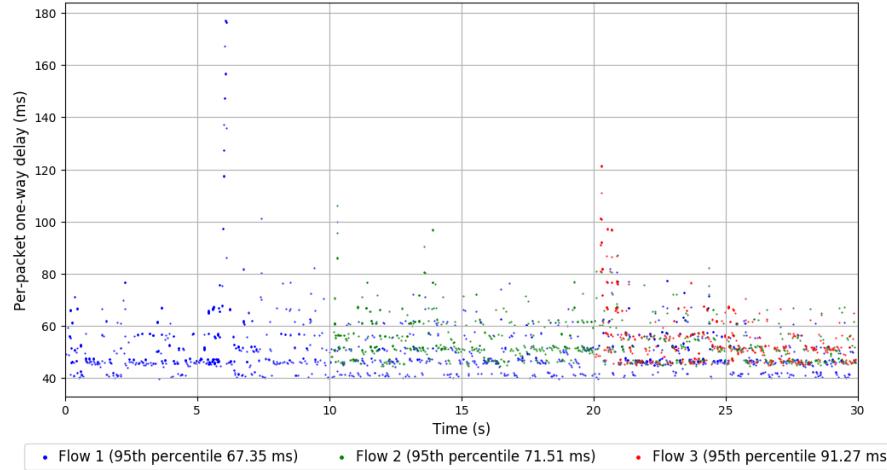
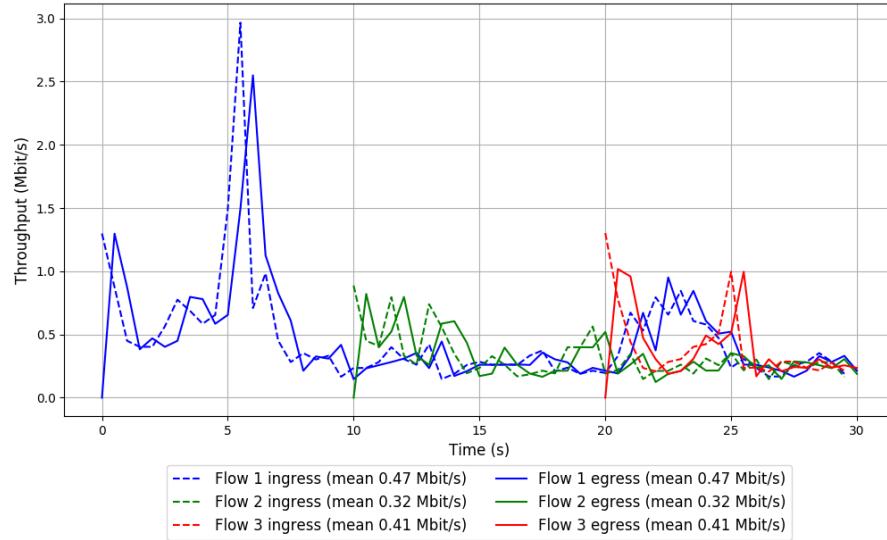


Run 2: Statistics of Sprout

```
Start at: 2018-06-29 19:53:09
End at: 2018-06-29 19:53:39
Local clock offset: 2.574 ms
Remote clock offset: -6.201 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 72.607 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 67.354 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 71.506 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 91.268 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

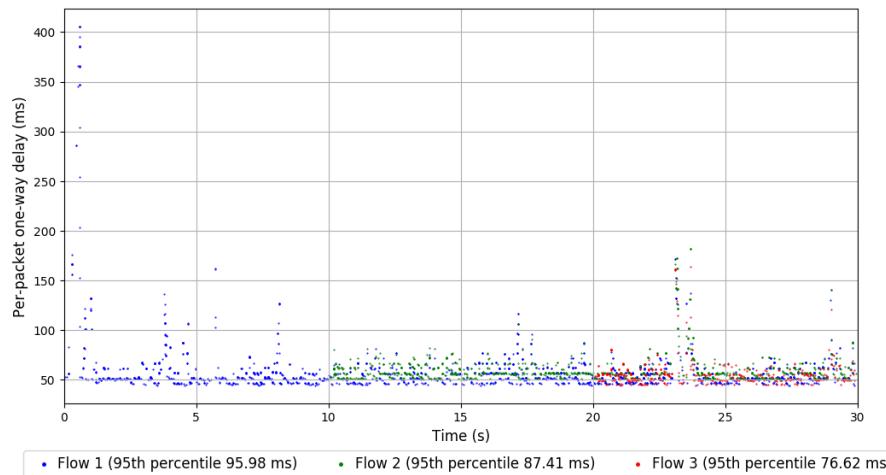
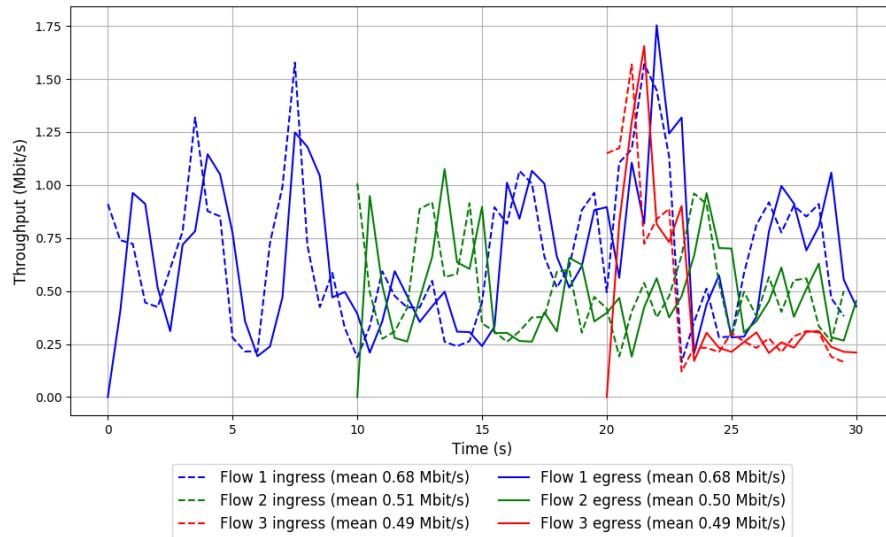


Run 3: Statistics of Sprout

```
Start at: 2018-06-29 20:11:55
End at: 2018-06-29 20:12:25
Local clock offset: -2.021 ms
Remote clock offset: -8.475 ms

# Below is generated by plot.py at 2018-06-29 20:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 87.121 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 95.980 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 87.406 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 76.620 ms
Loss rate: 0.02%
```

Run 3: Report of Sprout — Data Link

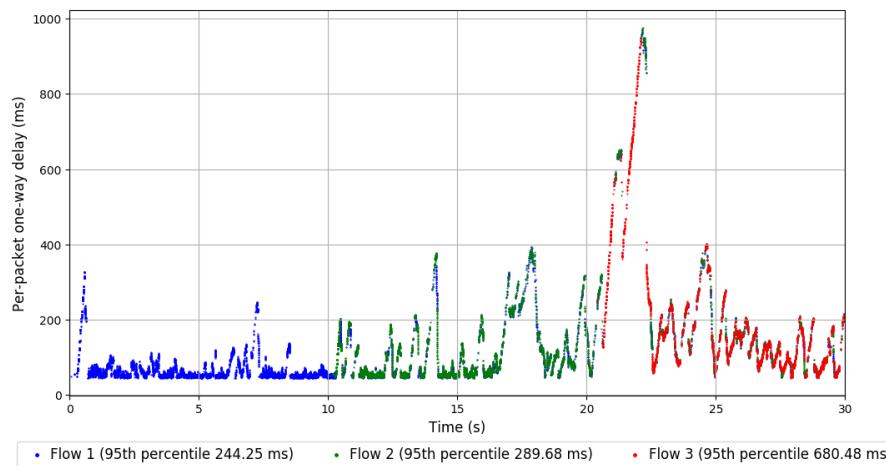
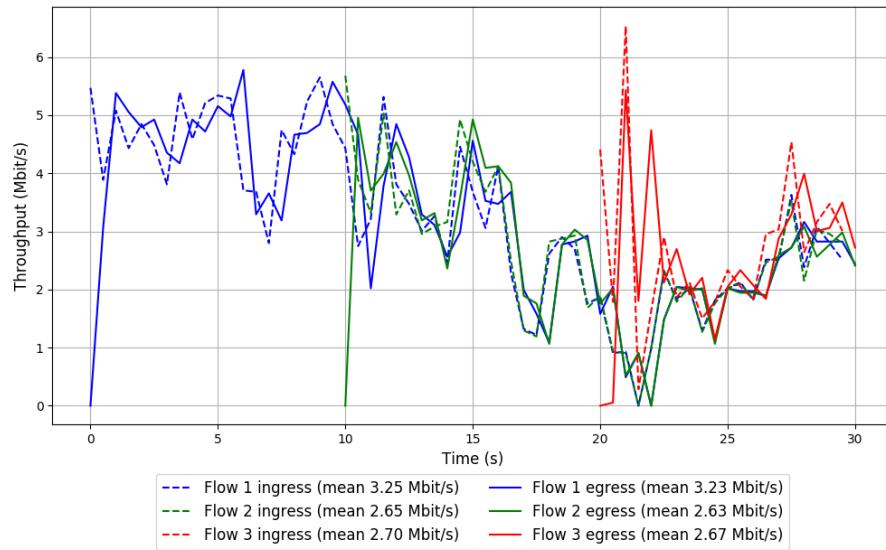


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-06-29 19:32:17
End at: 2018-06-29 19:32:47
Local clock offset: 2.012 ms
Remote clock offset: -3.309 ms

# Below is generated by plot.py at 2018-06-29 20:24:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.86 Mbit/s
95th percentile per-packet one-way delay: 341.004 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 244.247 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 289.679 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 680.480 ms
Loss rate: 1.88%
```

Run 1: Report of TaoVA-100x — Data Link

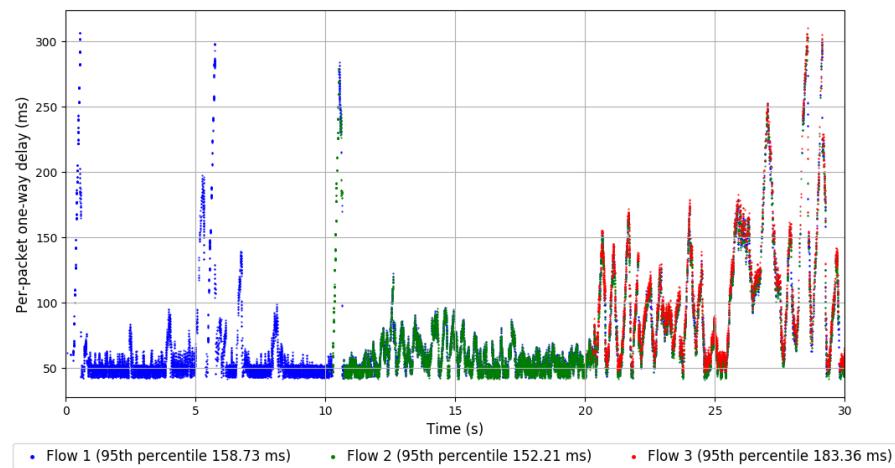
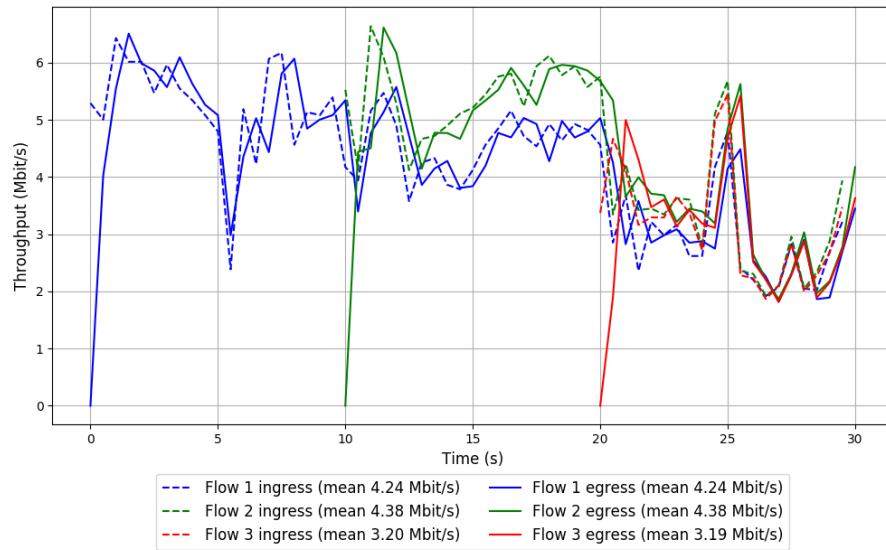


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-06-29 19:50:57
End at: 2018-06-29 19:51:27
Local clock offset: 2.364 ms
Remote clock offset: -4.972 ms

# Below is generated by plot.py at 2018-06-29 20:24:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 161.313 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 158.731 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 4.38 Mbit/s
95th percentile per-packet one-way delay: 152.208 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 3.19 Mbit/s
95th percentile per-packet one-way delay: 183.363 ms
Loss rate: 0.73%
```

Run 2: Report of TaoVA-100x — Data Link

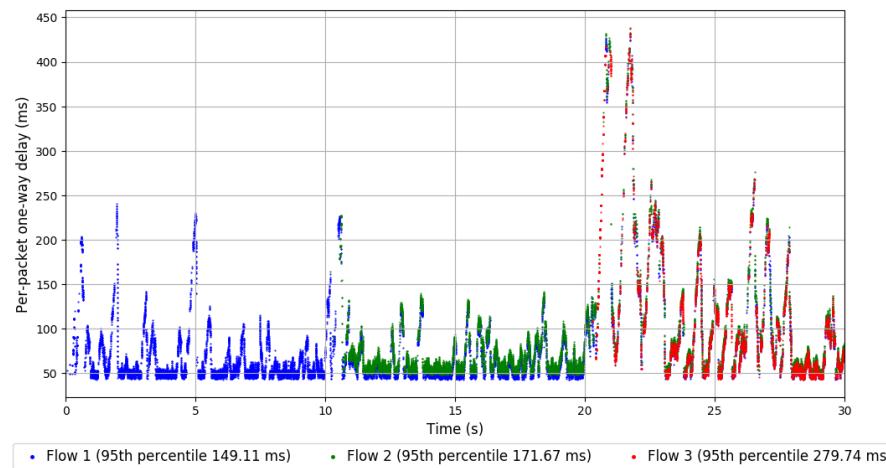
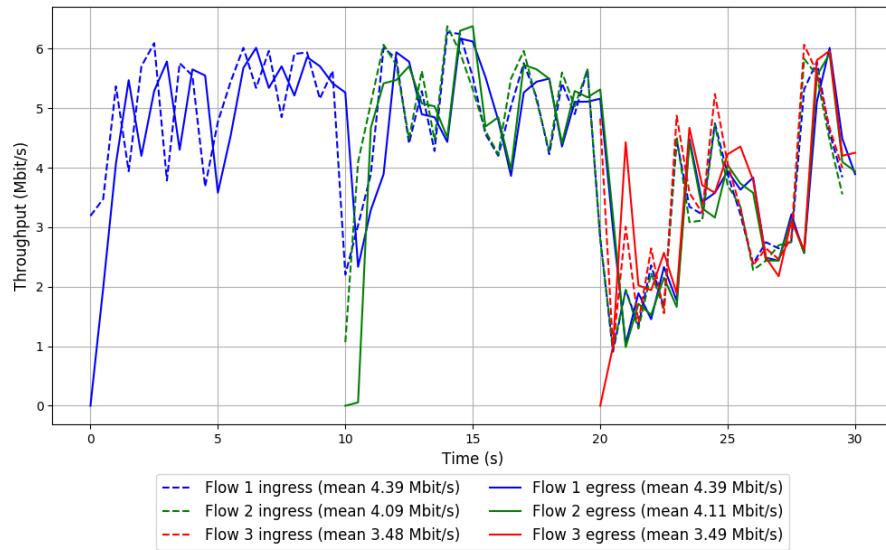


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-06-29 20:09:42
End at: 2018-06-29 20:10:12
Local clock offset: -1.024 ms
Remote clock offset: -8.41 ms

# Below is generated by plot.py at 2018-06-29 20:24:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.26 Mbit/s
95th percentile per-packet one-way delay: 192.973 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 149.114 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 171.668 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 279.743 ms
Loss rate: 0.79%
```

Run 3: Report of TaoVA-100x — Data Link

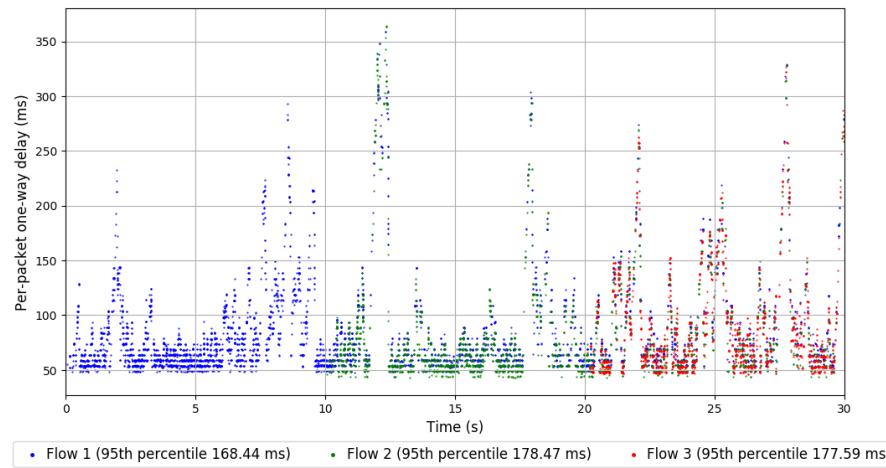
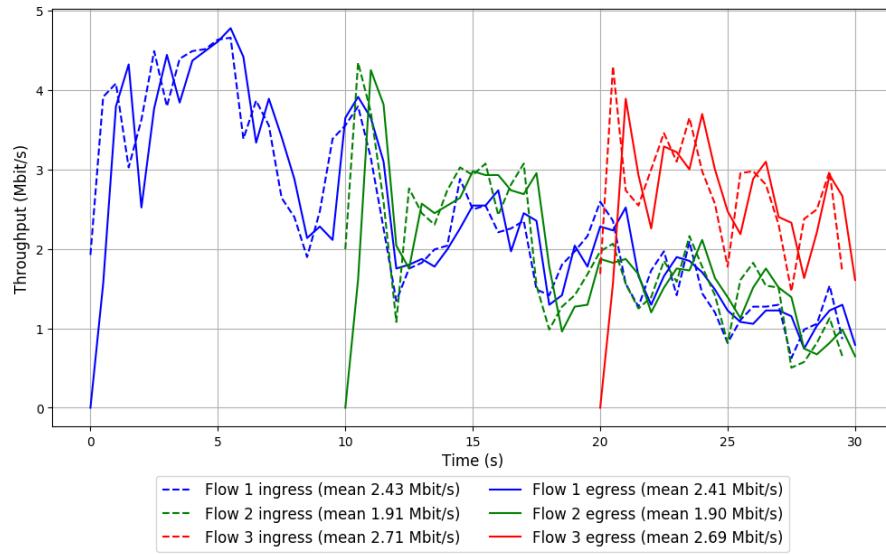


Run 1: Statistics of TCP Vegas

```
Start at: 2018-06-29 19:31:11
End at: 2018-06-29 19:31:41
Local clock offset: -1.171 ms
Remote clock offset: -3.521 ms

# Below is generated by plot.py at 2018-06-29 20:24:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 173.775 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 2.41 Mbit/s
95th percentile per-packet one-way delay: 168.438 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 178.468 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 2.69 Mbit/s
95th percentile per-packet one-way delay: 177.586 ms
Loss rate: 1.11%
```

Run 1: Report of TCP Vegas — Data Link

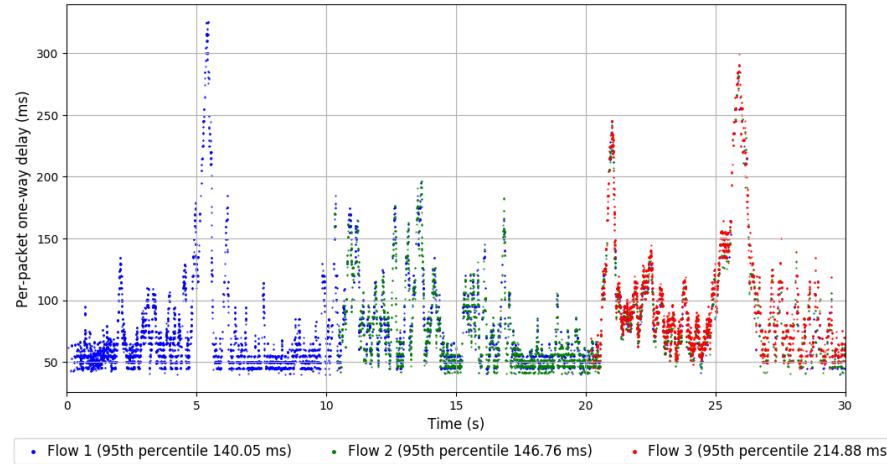
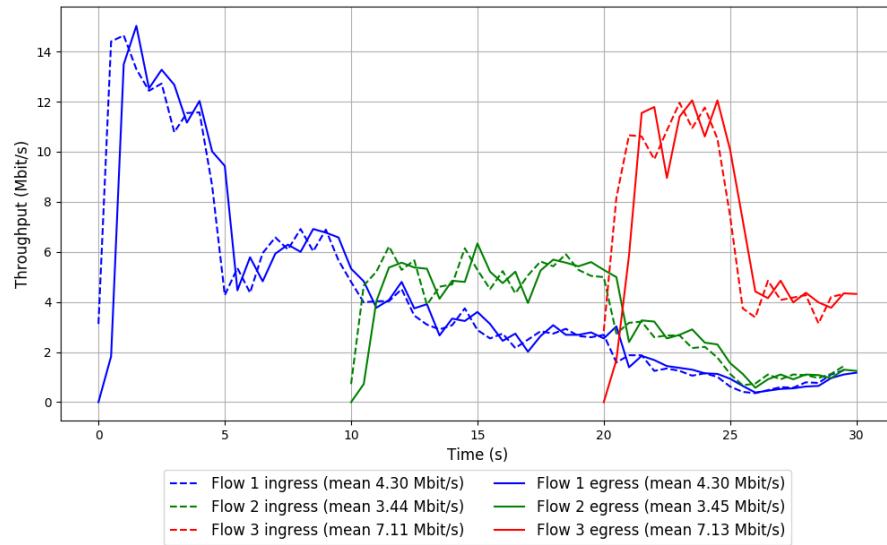


Run 2: Statistics of TCP Vegas

```
Start at: 2018-06-29 19:49:51
End at: 2018-06-29 19:50:21
Local clock offset: 4.134 ms
Remote clock offset: -4.63 ms

# Below is generated by plot.py at 2018-06-29 20:24:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.95 Mbit/s
95th percentile per-packet one-way delay: 155.468 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 4.30 Mbit/s
95th percentile per-packet one-way delay: 140.050 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 3.45 Mbit/s
95th percentile per-packet one-way delay: 146.765 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 7.13 Mbit/s
95th percentile per-packet one-way delay: 214.875 ms
Loss rate: 0.08%
```

Run 2: Report of TCP Vegas — Data Link

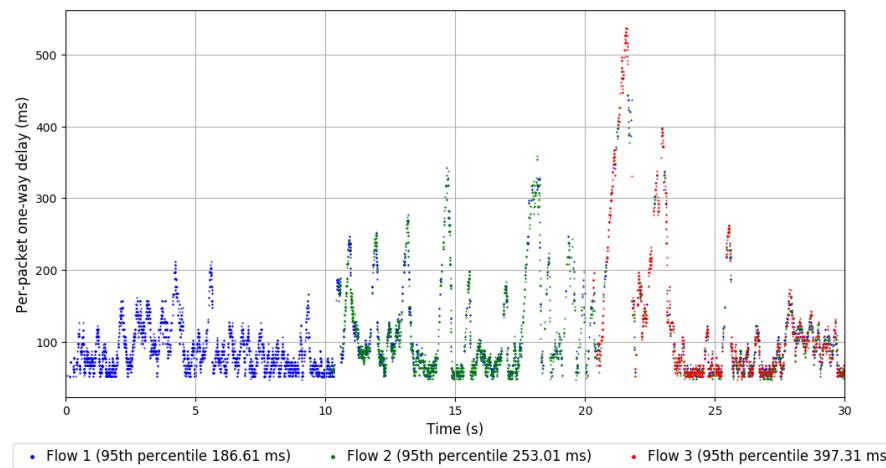
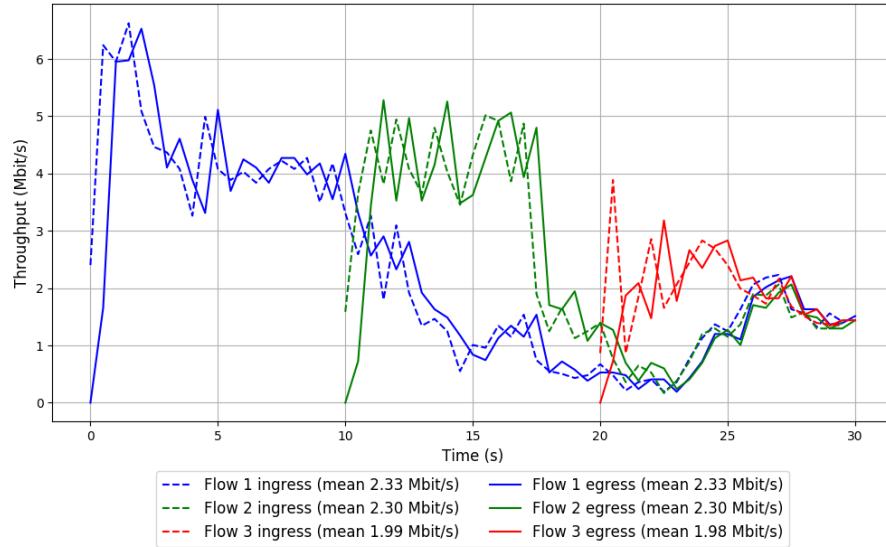


Run 3: Statistics of TCP Vegas

```
Start at: 2018-06-29 20:08:37
End at: 2018-06-29 20:09:07
Local clock offset: 1.277 ms
Remote clock offset: -8.091 ms

# Below is generated by plot.py at 2018-06-29 20:24:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.51 Mbit/s
95th percentile per-packet one-way delay: 238.649 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 186.611 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 253.012 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 397.309 ms
Loss rate: 0.49%
```

Run 3: Report of TCP Vegas — Data Link

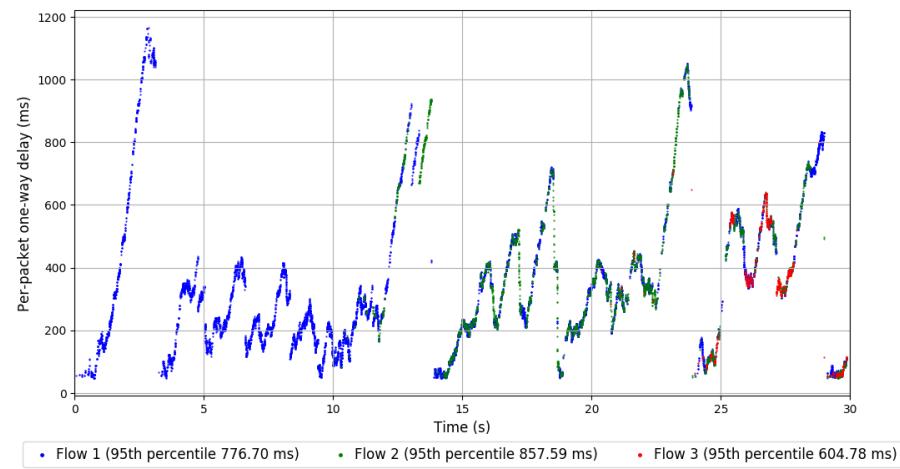
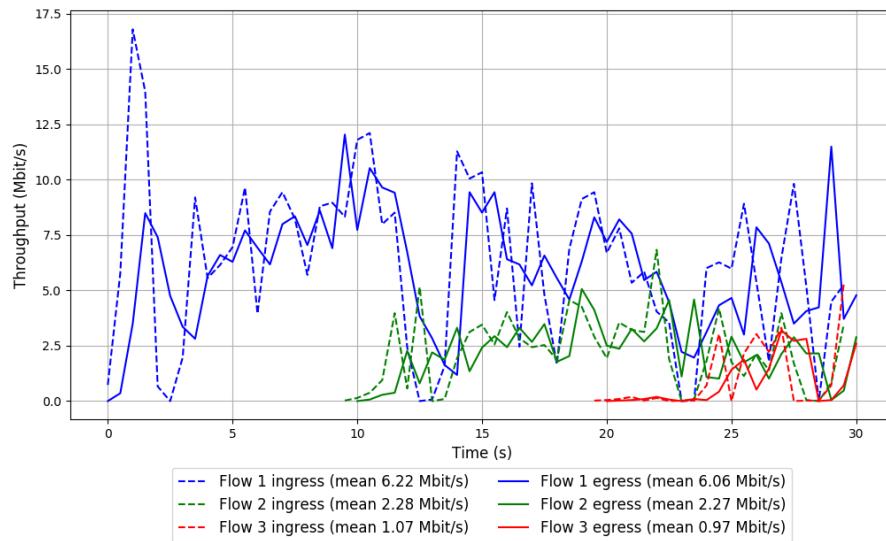


Run 1: Statistics of Verus

```
Start at: 2018-06-29 19:28:59
End at: 2018-06-29 19:29:29
Local clock offset: 3.102 ms
Remote clock offset: -2.794 ms

# Below is generated by plot.py at 2018-06-29 20:24:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 793.879 ms
Loss rate: 3.00%
-- Flow 1:
Average throughput: 6.06 Mbit/s
95th percentile per-packet one-way delay: 776.702 ms
Loss rate: 2.86%
-- Flow 2:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 857.590 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 604.783 ms
Loss rate: 12.91%
```

Run 1: Report of Verus — Data Link

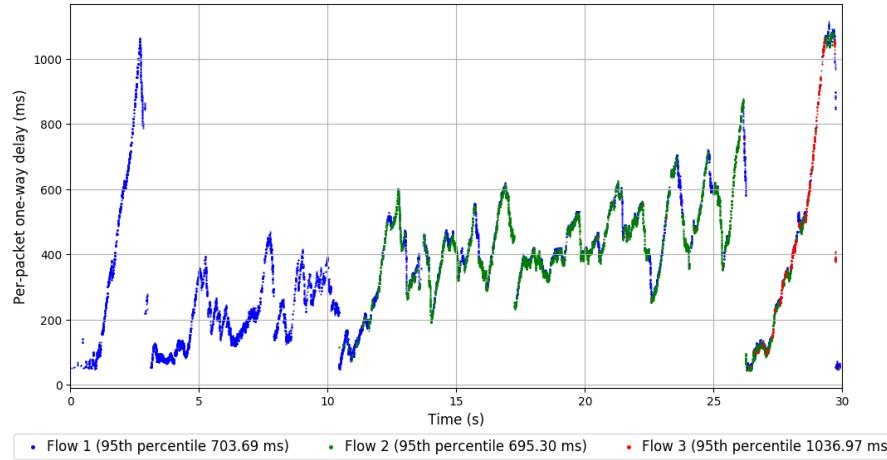
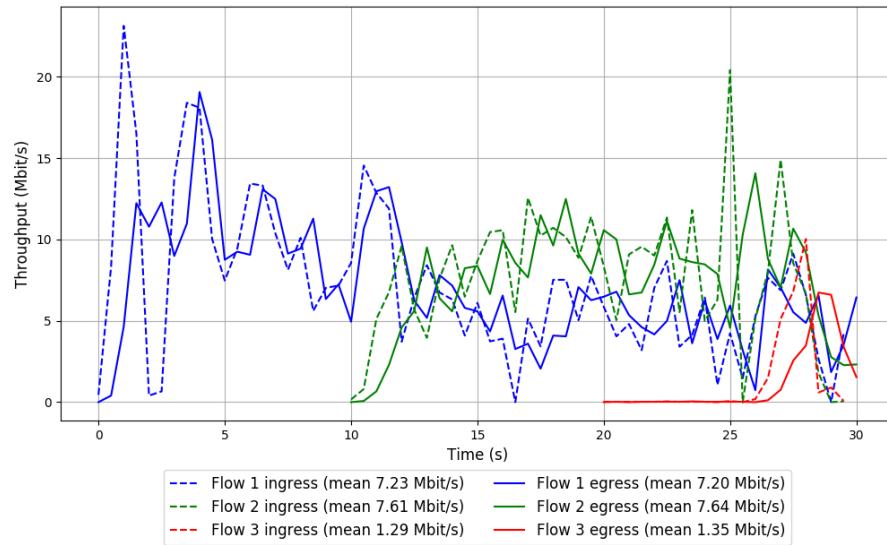


Run 2: Statistics of Verus

```
Start at: 2018-06-29 19:47:39
End at: 2018-06-29 19:48:09
Local clock offset: 2.653 ms
Remote clock offset: -3.703 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.64 Mbit/s
95th percentile per-packet one-way delay: 724.114 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 7.20 Mbit/s
95th percentile per-packet one-way delay: 703.690 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 7.64 Mbit/s
95th percentile per-packet one-way delay: 695.303 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 1036.975 ms
Loss rate: 0.28%
```

Run 2: Report of Verus — Data Link

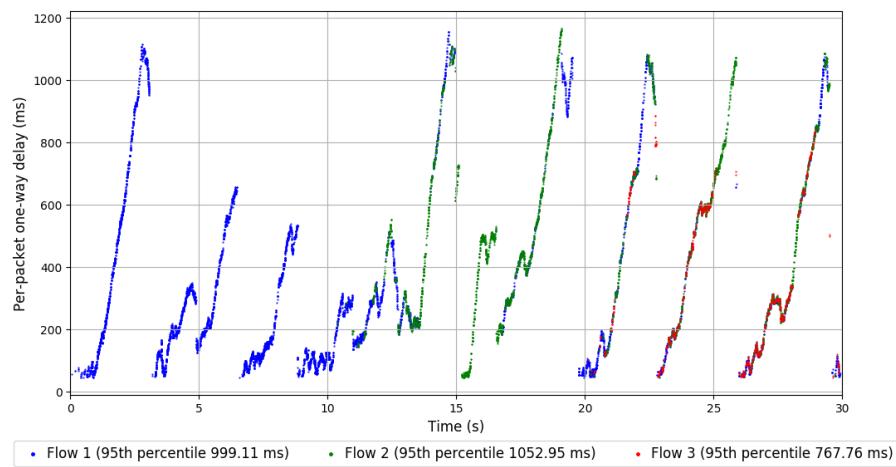
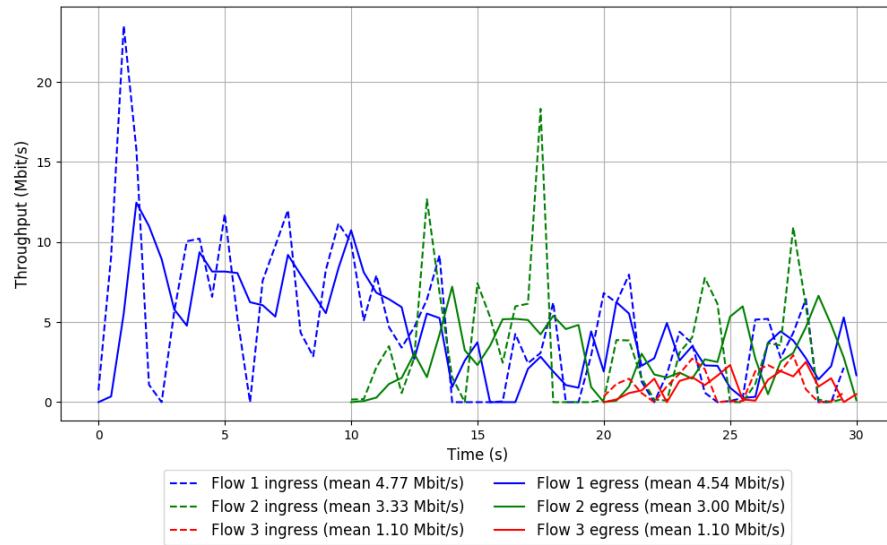


Run 3: Statistics of Verus

```
Start at: 2018-06-29 20:06:26
End at: 2018-06-29 20:06:56
Local clock offset: 1.67 ms
Remote clock offset: -7.009 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 1005.224 ms
Loss rate: 6.32%
-- Flow 1:
Average throughput: 4.54 Mbit/s
95th percentile per-packet one-way delay: 999.107 ms
Loss rate: 4.82%
-- Flow 2:
Average throughput: 3.00 Mbit/s
95th percentile per-packet one-way delay: 1052.954 ms
Loss rate: 10.42%
-- Flow 3:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 767.762 ms
Loss rate: 0.98%
```

Run 3: Report of Verus — Data Link

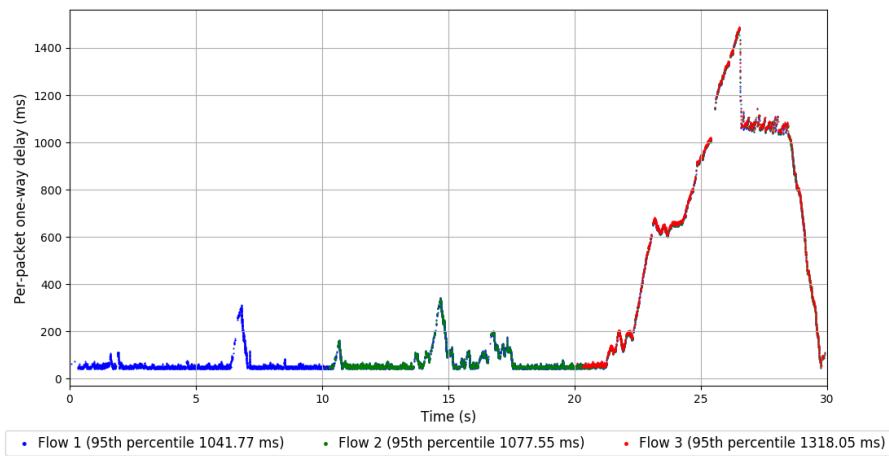
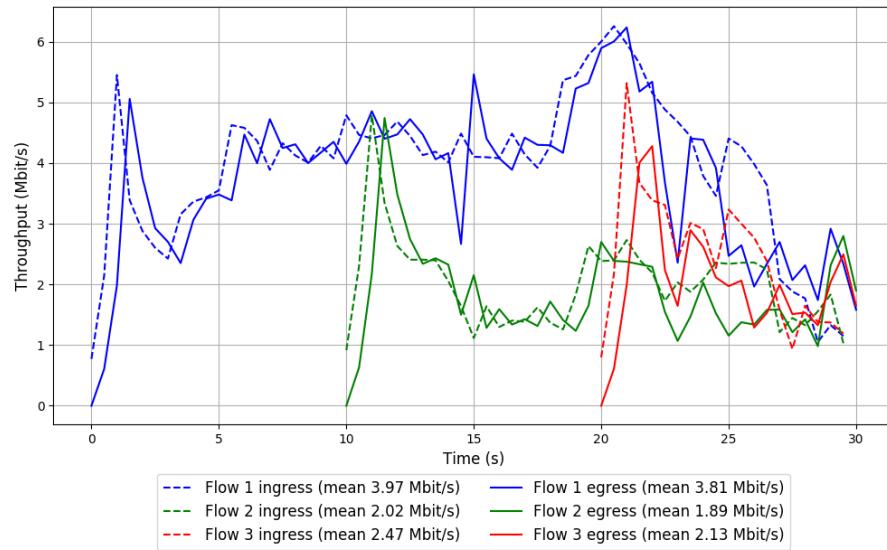


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-06-29 19:38:52
End at: 2018-06-29 19:39:22
Local clock offset: 1.65 ms
Remote clock offset: -2.119 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.76 Mbit/s
95th percentile per-packet one-way delay: 1072.492 ms
Loss rate: 6.09%
-- Flow 1:
Average throughput: 3.81 Mbit/s
95th percentile per-packet one-way delay: 1041.770 ms
Loss rate: 4.16%
-- Flow 2:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 1077.545 ms
Loss rate: 6.81%
-- Flow 3:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 1318.049 ms
Loss rate: 14.29%
```

Run 1: Report of PCC-Vivace — Data Link

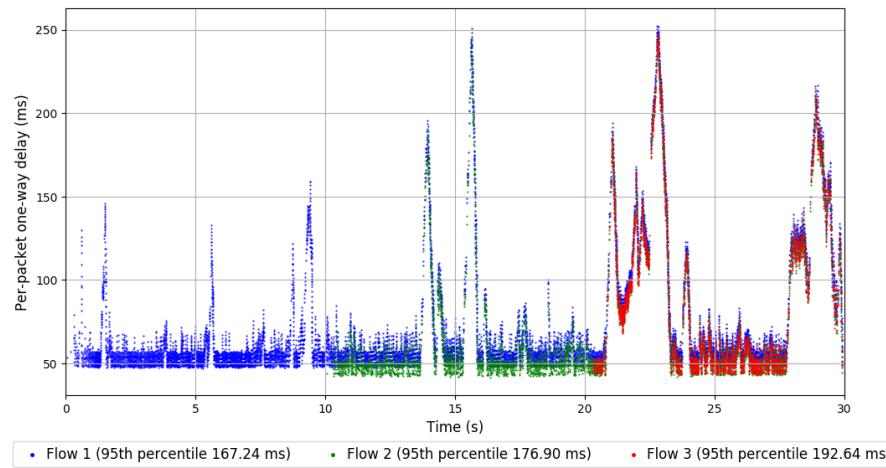
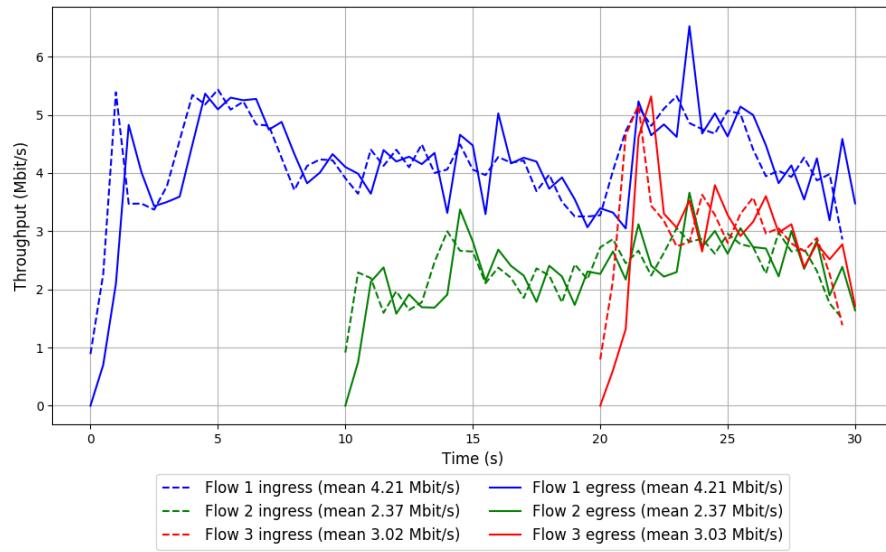


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-06-29 19:57:33
End at: 2018-06-29 19:58:03
Local clock offset: 1.273 ms
Remote clock offset: -6.931 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 176.618 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 167.243 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 176.898 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 192.636 ms
Loss rate: 0.16%
```

Run 2: Report of PCC-Vivace — Data Link

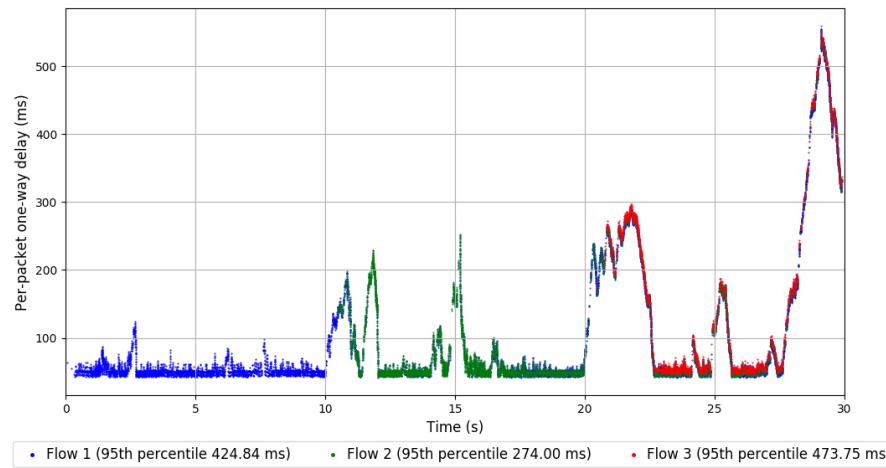
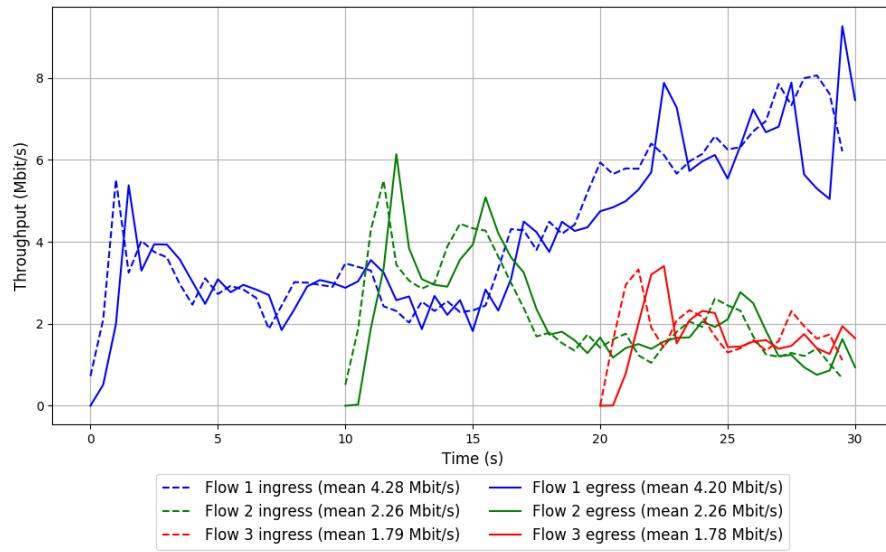


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-06-29 20:16:18
End at: 2018-06-29 20:16:48
Local clock offset: 0.591 ms
Remote clock offset: -8.419 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.27 Mbit/s
95th percentile per-packet one-way delay: 419.174 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 424.838 ms
Loss rate: 2.05%
-- Flow 2:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 274.005 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 473.746 ms
Loss rate: 2.67%
```

Run 3: Report of PCC-Vivace — Data Link

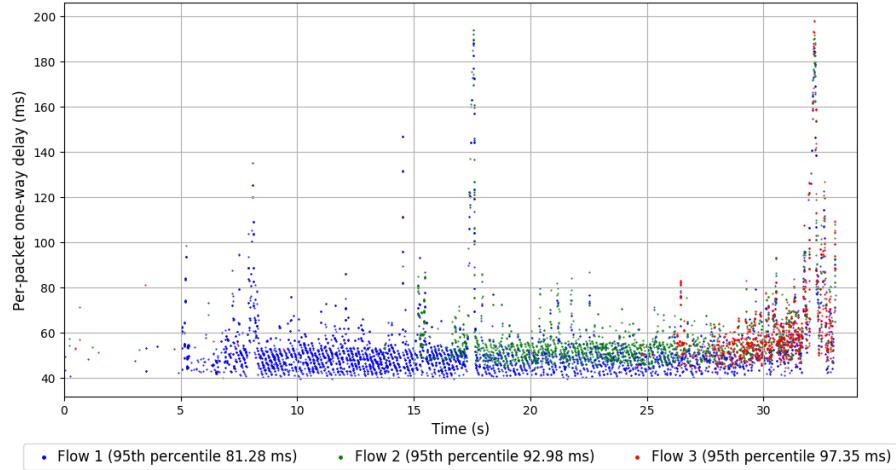
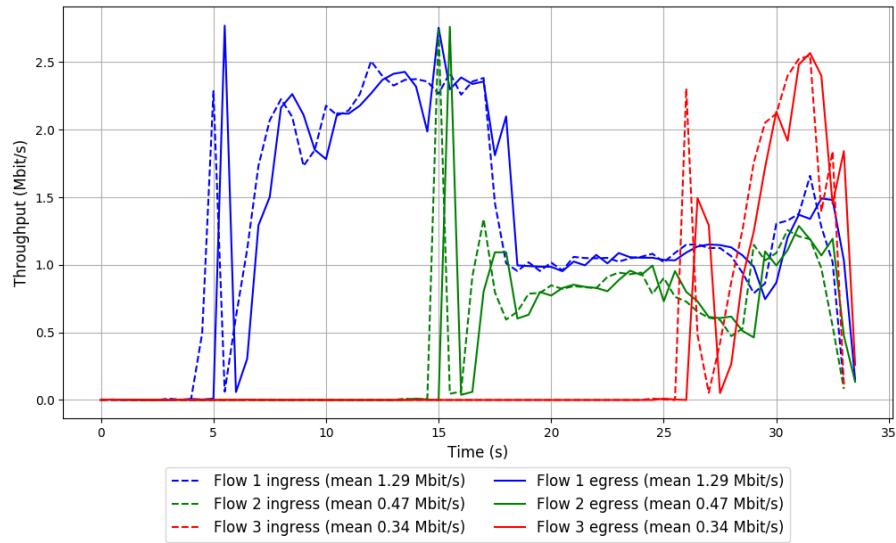


```
Run 1: Statistics of WebRTC media

Start at: 2018-06-29 19:33:23
End at: 2018-06-29 19:33:53
Local clock offset: 2.807 ms
Remote clock offset: -2.907 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 87.465 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 81.281 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 92.982 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 97.353 ms
Loss rate: 0.52%
```

Run 1: Report of WebRTC media — Data Link

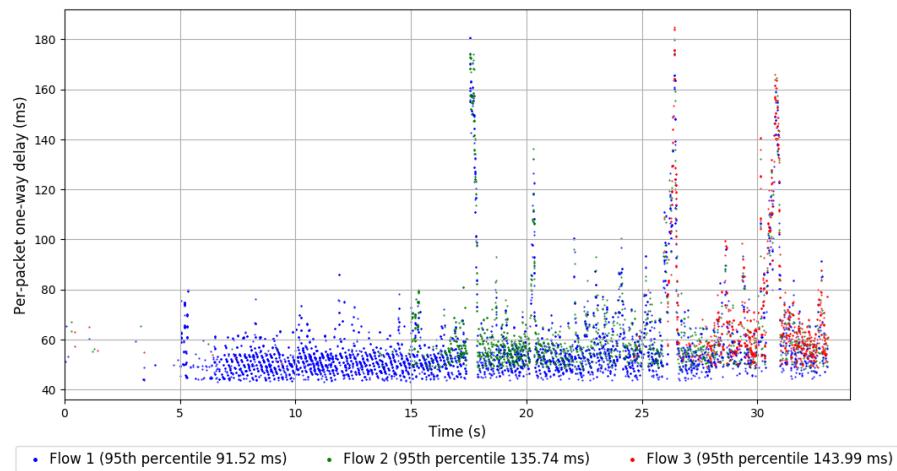
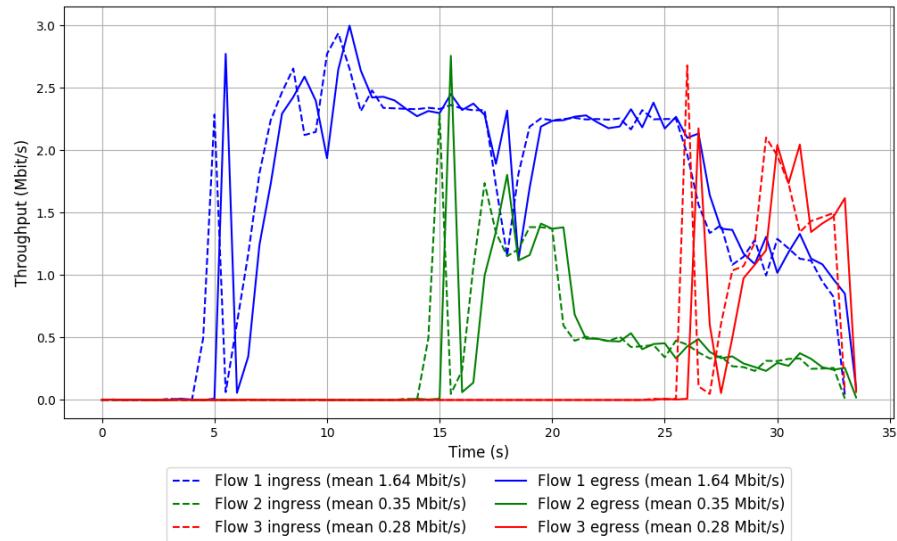


Run 2: Statistics of WebRTC media

```
Start at: 2018-06-29 19:52:04
End at: 2018-06-29 19:52:34
Local clock offset: -0.286 ms
Remote clock offset: -6.091 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 113.221 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 91.516 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 135.742 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 143.986 ms
Loss rate: 0.51%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media

Start at: 2018-06-29 20:10:49
End at: 2018-06-29 20:11:19
Local clock offset: 2.488 ms
Remote clock offset: -8.04 ms

# Below is generated by plot.py at 2018-06-29 20:24:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 101.438 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 86.875 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 134.443 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 92.800 ms
Loss rate: 1.00%
```

Run 3: Report of WebRTC media — Data Link

